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COVER FOCUS

Avoiding Common Data Center Problems

What are the most common problems related to cloud computing, virtualization, networking, and outsourcing? And how do you solve them? We talked with some industry insiders to find out.

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Common Cloud Conflicts

Problems Are Plenty In The Cloud, But Most Are Easy To Resolve

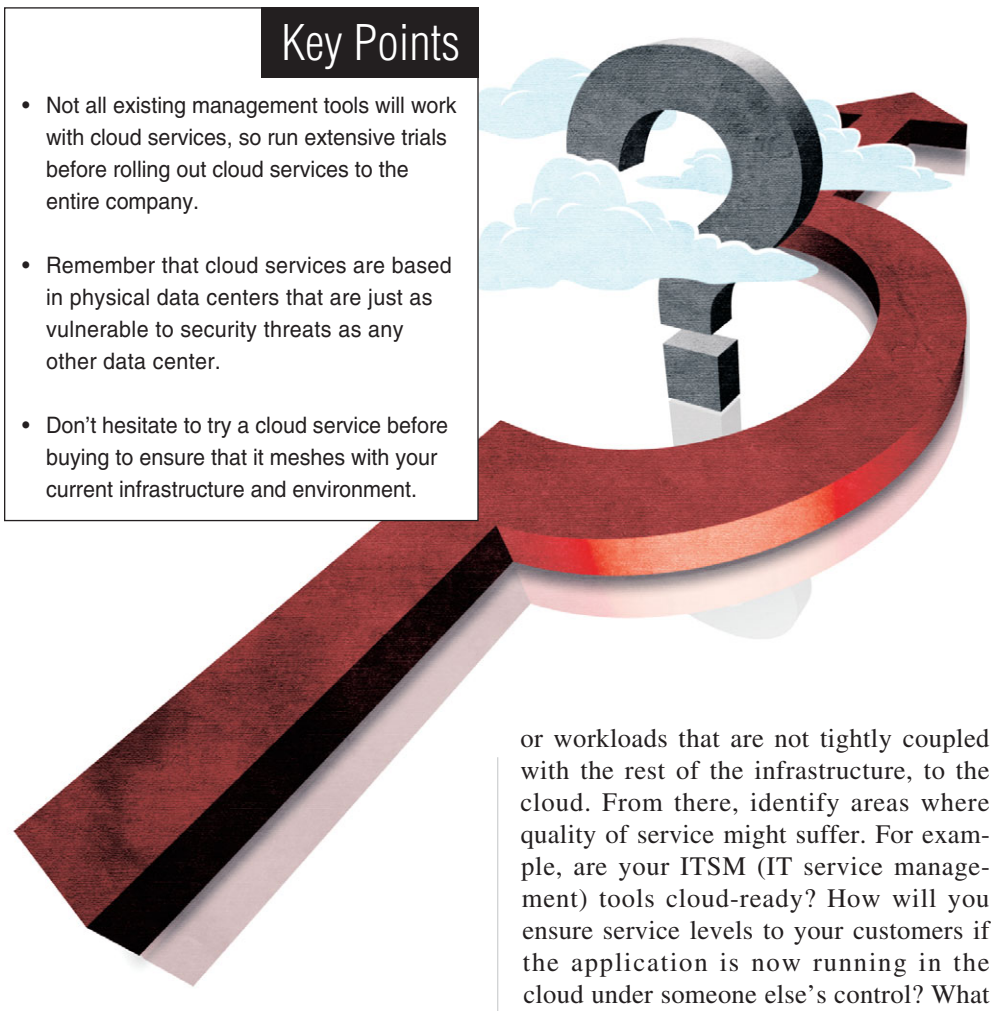
by Christian Perry

• • •

Although cloud vendors might tout a problem-free experience with their services, smart customers come prepared to deal with security, bandwidth, integration, and other problems that can easily put their businesses and data at risk. Here's a look a common problems plaguing the cloud and how to handle them.

Key Points

- Not all existing management tools will work with cloud services, so run extensive trials before rolling out cloud services to the entire company.
- Remember that cloud services are based in physical data centers that are just as vulnerable to security threats as any other data center.
- Don't hesitate to try a cloud service before buying to ensure that it meshes with your current infrastructure and environment.



Overconfidence With Tools

Enterprises spend years building workload automation polices to connect various applications seamlessly and efficiently, says Mark Fletcher, COO at ORSYP (www.orsyp.com). However, the addition of cloud services has the potential to break those connections. Further, companies that invest in IT operations management toolsets tend to believe that these existing tools will work in this new hybrid environment, but it's harder than it seems.

"You will often be told that your existing management tools can be made to work," Fletcher says. "Be careful. Yes, they can be made to work for the current problem, then the next problem, etc., [but] it can get expensive. Make sure you undertake a full review and identify all your problems up front. If then you see it might be better to change the tool, then do so. It will save you far more in the long run."

He also recommends beginning by moving some less mission-critical workloads, or workloads that are not tightly coupled with the rest of the infrastructure, to the cloud. From there, identify areas where quality of service might suffer. For example, are your ITSM (IT service management) tools cloud-ready? How will you ensure service levels to your customers if the application is now running in the cloud under someone else's control? What is the impact of a disruption of service in the cloud on your local production? What's the disaster recovery plan?

Failure To Ensure Integration

A cloud service might look like a perfect fit for your business—that is, until it's deployed and your IT team realizes it simply doesn't mesh with your current infrastructure. Daniel Chalef, CEO of KnowledgeTree (www.knowledgetree.com), has noticed that small and midsized businesses sometimes select a vendor that doesn't provide a clear path to transfer their data in and out of the

Go to Page 10

How Secure Is Your Enterprise?

To Avoid Data Breach, Assess Your Current Security Situation

by Jean Thilmany

• • •

Enterprises spend thousands of dollars on the latest lines of security defense, but they are still vulnerable to data breaches and failed audits due to areas that are often overlooked.

IT managers can never really be assured their IT operations are 100% secure, but by assessing their security methods and taking into account areas perhaps overlooked in the past, Chris Boyd, senior threat researcher at GFI Software (www.gfi.com), says they can get a better understanding of just how secure their enterprises are, he says.

"Personally, I'd start with the assumption that everything has been compromised—whether that's the physical building security, firewall policies, malware on the network, or data leaks—then [ask]: 'What's the most damage that could come out of this?'" Boyd says. "Once you know the worst that can happen, you can take steps to lessen the damage."

Evaluate Your Security Setup

Begin with a security assessment, says Upen Sachdev, senior director at technology services provider Allied Digital Services (www.allieddigital.us). Look at the firewall first, which is usually the top line of defense against hackers at SMEs, Sachdev says. Every day, hackers run massive network scans across the Internet in their search for vulnerable firewalls.

Key Points

- Assess current security measures throughout the enterprise and identify any security holes.
- Keep in mind that any changes you make to the network may open up your enterprise to security threats.
- Social networking sites can lead to security breaches; some vendors make technology that analyzes and stops such leaks.

"Monitoring a firewall and reviewing its logs will tell you how often your network was under attack and how successful

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News

ONFI 3.0 Flash Spec Released

The ONFI (Open NAND Flash Interface) Working Group recently published version 3.0 of its nonvolatile memory controller specification. ONFI 3.0 provides for a data transfer speed of up to 400MBps to and from NAND flash memory used in SSDs and other solid-state storage applications. It also uses fewer memory channels than last summer's 200MBps ONFI 2.3 spec and may lead to smaller, cheaper, and faster devices for enterprise and consumer use. ONFI 3.0 also one-ups ONFI 2.3's power efficiency and error-correction capabilities. Members of the working group include Intel, Micron, Spansion, SanDisk, and Hynix, among others.

EHRs Raise Concerns For Half Of U.S. Patients

Half of American medical patients think that a move to electronic health records will have ill effects on their privacy, according to a recent survey by CDW Healthcare. The public sector subsidiary of IT provider CDW reported that 49% of U.S. patients surveyed are skeptical that their personal health information and data will be kept secure in electronic form. Perhaps they have a point, however: CDW Healthcare also found that 30% of U.S. doctors don't run antivirus and 34% don't have network firewalls in their practices.

Graphics-Enabled CPUs Booming

According to a new report from IHS iSuppli, half of all notebook PCs and 45% of all desktop PCs shipped worldwide this year will feature integrated graphics processors such as Nvidia's Tegra, AMD's Fusion, or Intel's Sandy Bridge. Graphics-enabled microprocessors will also show up in 11% more notebooks (up from 39% in 2010). Overall, the integrated graphics market will grow 9% this year, up from its 36% share of the processor market in 2010, and the firm expects the trend to continue for the next few years, predicting that 83% of all notebook PC and 76% of all desktop PC shipments worldwide will have integrated graphics-enabled microprocessors by 2014.

Bing Search Share Increases

Microsoft's Bing engine accounted for about 28.48% of all searches during February, up from 27.44% in January, according to the latest research from Experian Hitwise. Bing-powered searches include those from Yahoo!, which accounted for 14.99% of the total, and Bing, which was used for the remaining 13.49%. Google still maintained its market dominance and was used for 66.69% of all searches during the month; however, that share dropped 2% between January and February. In terms of search results, Yahoo! and Bing ranked best, with just more than 81% of searches on both sites resulting in a visit to a Web site; Google's search "success rate" was about 65%.

AV Products Struggle With Multivector Attacks

Drive-by downloads remain the attack vector most commonly used to infect computers, according to recent tests conducted by NSS Labs, but about 15% of attacks are now arriving via email containing a malicious attachment. NSS Labs' tests aimed to discover how effective security products are at uncovering malware coming from multiple attack vectors, including Web sites, email attachments, and USB flash drives. Test results indicate that by default, numerous antivirus products let users download all email to an inbox and not scan the messages, even if a message contains malware. Overall, the average protection rate of the 10 products NSS Labs tested hit just 36%, although products that didn't scan email prior to arriving in an inbox did scan it when the user elected to save the attachment, which improved the average protection rate to 74%. Overall, NSS Labs says that the products "missed between 10% and 60% of the evasions typically used by cybercriminals."

J.D. Power Gives Verizon Props For Best Call Quality

J.D. Power and Associates named Verizon Wireless as the best in quality in five regions, according to the firm's "U.S. 2011 Wireless Call Quality Performance Study Volume 1." This is the 13th consecutive reporting period that Verizon has taken top place in the Northeast; it's also tops in the Southeast, Southwest, and West regions and is tied with AT&T in the Mid-Atlantic region. Overall, Verizon Wireless customers report fewer dropped calls and less interference than other carriers. The survey found that the areas that are ideal for talking on your phone with no interruption or dropped calls are Cincinnati and Pittsburgh and that the Washington, D.C., metro area has the worst call quality.

Gartner Report Predicts Growth Of Social CRM

Social CRM may improve customer service and create new contact center opportunities in the next two years for about 30% of leading companies, according to new research from Gartner. Companies already embracing social media for business are realizing that their employees can provide more rapid customer service than that of call centers. There are several problems that could prevent early adoption of social CRM, such as tight budgets, "high-profile uncertainty," and rapidly evolving social technology. According to Gartner Research Vice President Drew Kraus, "Community peer-to-peer support projects will supplement or replace Tier 1 contact center support in more than 40% of top 1,000 companies with a contact center."

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 13 major companies in the technology market.

Company	Symbol	Year Ago	March 3 $	March 17 $	% change from previous issue
AMD	AMD	$9.39	$9.28	$8.31	▼ 10.45%
Apple	AAPL	$224.65	$359.56	$334.64	▼ 6.93%
CA Technologies	CA	$23.51	$24.72	$22.85	▼ 7.56%
Cisco Systems	CSCO	$26.34	$18.53	$17	▼ 8.26%
Dell	DELL	$14.55	$15.73	$14.11	▼ 10.3%
Google	GOOG	$566.40	$609.56	$561.36	▼ 7.91%
HP	HPQ	$52.73	$43.20	$41.43	▼ 4.1%
IBM	IBM	$128.38	$163.48	$154.18	▼ 5.69%
Intel	INTC	$22.20	$21.79	$19.90	▼ 8.67%
Microsoft	MSFT	$29.61	$26.20	$24.78	▼ 5.42%
Oracle	ORCL	$25.38	$33.03	$30.55	▼ 7.51%
Red Hat Software	RHT	$30.20	$41.86	$39.29	▼ 6.14%
Symantec	SYMC	$17.46	$17.96	$17.24	▼ 4.01%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

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EMR Market Growth Is Slower Than Expected

According to market research firm Kalorama Information's "EMR 2011: The Market for Electronic Medical Record Systems" report, the growth rate of EMRs (electronic medical records) increased 10% in 2009 and 13.6% in 2010. The numbers were lower than the 15% growth rate predicted for both years, and part of the reason for the slower adoption rate was confusion about meaningful use guidelines. Kalorama expects that publication of the final rules for meaningful use will spur more growth over the next 24 months. Overall, Kalorama forecasts market growth of 18 to 20% for the next two years. The report indicates that the EMR market recorded $15.7 billion in 2010.

Group Releases New PCI-E SSD Spec

The NVMCI (Non-Volatile Memory Host Controller Interface) Work Group has released a new specification for PCI-E solid-state drives, which would take the place of the SATA interface currently used for data transfer. The goal of the specification is to enable wider adoption of PCI-E SSDs. The NVM Express 1.0 specification provides definitions for how vendors should set up an optimized register interface, command set, and feature set. Multiple core and thread architectures will be supported to increase data transport speed. Enterprises will like that the specifications add items such as end-to-end data protection, security, and encryption, as well as error reporting and management capabilities.

Apple Still Winning Tablet Wars

Although there are now more tablets on the market than there were when Apple's iPad debuted—and certainly there are still more on the way—the American public seems to have zeroed in on the iPad as its tablet device of choice. In fact, Apple's numbers are on the rise: In a recent ChangeWave survey of people who said they were planning to purchase a tablet, more people said they'd purchase the iPad now than did in an earlier survey. About 82% of respondents said they'd select the iPad, a two-point increase over last October's survey.

Gartner Points Out Risks In Cloud Services Contracts

Although cloud users have typically been concerned about potential risks related to security and the availability of offsite data, a recent Gartner report says that the real dangers may lie in the contracts offered by cloud vendors. The research company notes that cloud-based services are an immature market, and this immaturity is often reflected in questionable contracts that are "opaque and easily changed," lack clear service commitments, and have terms that tend to favor the vendor. Gartner recommends that before signing a cloud service contract, buyers examine their SLAs and understand their options in the event of a service failure.

SMB PC Sales Up From 2009

Small and midsized businesses are allocating more funds for PC spending, says market research firm The NPD Group. According to the firm, PC sales alone jumped 33% to $6 billion, while overall hardware spending rose to $38 billion, an 18% increase from 2009. The NPD Group suggests that spending is up due to an increase in sales of infrastructure products through commercial technology resellers and distributors, as well as efforts to compensate for 2009, when companies tended to rein in infrastructure spending due to the recession.

Flash Memory Chip Prices Up

According to DRAMeXchange, prices for flash memory chips went up in the wake of the earthquake and tsunami in Japan, which disrupted the supply chain of chips. Some factories in the country are temporarily closed due to damage and the inability to get sufficient power, while others that can still function at full capacity are affected by the disruptions in other parts of the country. DRAM contract prices were up by as much as 6.7% in the week following the disasters, while NAND contract prices were up more significantly—as much as 16.3%. Japan accounts for 35.7% of NAND flash and 13.6% of DRAM production globally.

Verizon iPhone Seizing Part Of iPhone Market Share

The new Verizon iPhone, which has only been available since mid-February, is already making a dent in AT&T's considerable share of the iPhone market, which it cultivated during the years it had exclusive carrier rights to the iPhone. Chitika Insights has a live tracker online that checks the Web usage of iPhones to determine which carrier gets the most hits. Since the Verizon device's release, the company had

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Efficiency Target: Data Center Design

Airflow, cooling, and power might get the lion's share of attention when it comes to data center efficiency, but, Gartner points out, data center design is one element you won't want to overlook.

According to Gartner, emerging trends in data center design could result in new data centers that can provide 300% more capacity in 60% less space. "The new data centers are not like the old ones. Organizations need to make a break with the past and realize that innovation in data center design will yield both reduced capital and operating expenditure," says Dave Cappuccio, Gartner's chief of infrastructure research. "Think small, think dense—the objective is the highest compute performance per kilowatt."

How do you do that? According to Gartner, enterprises should:

Networking Equipment: Your Next Big Purchase?

If your enterprise isn't purchasing data center networking equipment, it's in the minority, according to information from Infonetics Research.

"A new round of data center upgrades is underway, driven by virtualization, surging amounts of data, the growing need for storage, under-investment in 2009, and renewed life in the financial sector," says Matthias Machowinski, Infonetics' directing analyst for enterprise networks and video.

Among Infonetics' findings:

- The data center networking equipment market grew 67% between 2009 and 2010.
- 10Gb Ethernet accounted for 14% of data center switch ports in the third quarter of last year; that will grow to 50% by 2014.
- The North America and EMEA regions are currently leading the growth.

at one point gobbled up as much as 12% of AT&T's share; however, the balance may experience additional shifts as the Verizon iPhone spends more time on the market and when Apple releases the iPhone 5, which is due out this year.

Smartphone Components Getting Less Expensive

In-Stat reports that components used to build smartphones dropped in cost by 13% in 2010 thanks to higher-volume orders of displays and processors and the widespread use of inexpensive software and free open-source software. Another contributing factor is the integration of smartphones' wireless technologies into a single chip, which can handle GPS, Bluetooth, Wi-Fi, and occasionally FM radio. In 2010, Nielsen reported that 30% of all mobile phones shipped were smartphones; In-Stat predicts that more than 50% of all mobiles shipped in 2012 will be smartphones.

Dell Improves In Global PC Market

During the fourth quarter of last year, Dell increased its lead over Acer in the global PC market, according to the latest statistics from IHS iSuppli. No. 2 Dell's shipments remained relatively flat between the third and fourth quarters, iSuppli reports, but Acer's shipments dropped nearly 13%, primarily because of increased competition in the consumer-focused netbook and notebook market. iSuppli says that Dell's strength in the corporate market also gave the company a slight edge over Acer in terms of market share for all of 2010. HP ended the year in the No. 1 spot, with 18.8% of the market (8.7% year-over-year growth), followed by Dell with 12.7% of the market (12.4% growth) and Acer with 12% of the market (8% growth).

Malware Threat Growing

Malware infection is a problem that is growing exponentially, according to recent research from a couple of security firms. Dasient reports that in the fourth quarter of 2010, 1 million Web sites were compromised—double the number of compromised sites in Q4 2009—and 95% of Web users will come into contact with an infected page within three months. Along those lines, WhiteHat Security last year tested the protection level of 3,000 Web sites from 400 organizations and discovered that 44% were vulnerable to malware 24/7. A quarter of the sites tested were vulnerable nearly three-fourths of the time, and only 16% were rarely vulnerable.

Four Forces That Will Shape Data Centers In The Future

Gartner recently released a list of four forces that will have a large effect on how data centers are built and/or updated in coming years: smarter designs, green pressures, conquering density, and cloud computing. Gartner explains that companies will need to create smarter designs and conquer density because the need to maximize space will be even more important as time goes on. Green pressures will also have an effect as most companies begin or continue to implement green technology in their data centers. Finally, the growth of cloud computing could help lessen the need for large, physical data centers as companies start to move nonessential workloads to third-party, offsite cloud providers.

Engineers Develop Low-Power Memory

Researchers at the University of Illinois have developed a type of ultra-low-power non-volatile memory that uses 100 times less power and is faster than similar forms of available memory and could give future mobile devices, such as cell phones and laptops, increased battery life. Instead of the metal wires used in traditional memory, the team used microscopic carbon nanotubes, which require much less energy. They combined the nanotubes with phase change materials, which change physical state when an electric charge is applied. The team is now working to create larger memory arrays and further improve the technology's energy efficiency.

DHS Searching For Private Exec To Fill Cybersecurity Post

The Department of Homeland Security is reaching out to the private sector hoping for help in its cybersecurity efforts. The agency is working to protect the nation's critical infrastructure by joining forces with both private- and public-sector organizations; the DHS already has fusion centers and terrorism task forces across the country to share intelligence to support this issue. According to the DHS, a private-sector executive is needed to assess the National Cybersecurity and Communications Integration Center's capabilities and clearly identify the department's cyber strategies.

2010 Graphics Card Shipments Slip

Shipments of add-on graphics cards for 2010 came in lower than the recession year 2009, according to Jon Peddie Research, totaling 72.8 million units vs. 75.3 million for 2009. As predicted, Q4 2010 shipments also failed to exceed Q3 2010 shipments, although Nvidia did increase its Q4 2010 shipments by 4.1% from Q3 2010, while AMD's shipment fell 4.8% quarter over quarter. Nvidia, however, saw its market share dip 6.2% from 2009 to 2010, while AMD's share climbed 12.6%; market share from other vendors fell 44% year over year. Jon Peddie Research attributes the fall in unit shipments to IGPs, or graphics integrated into the motherboard, and CPUs that embed graphics abilities onto the same die. Additionally, an increasing market shift to notebooks and tablets is lowering graphics card shipments, the researcher says.

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PRODUCT RELEASES

The *Processor* Product Releases section includes brief overviews of data center products.

All products listed have been released recently, so use this section to get up to date with what's new on the market and to find products you need.

Manufacturers:
Do you have a new product that data center/IT managers would be interested in learning about?
Send your press release or product information to press@processor.com.

Physical Infrastructure

Black Box PoE Mid-Span Injectors

Black Box announced PoE Mid-Span Injectors, which are designed to deliver quick, safe, and effective power over Ethernet to a network. Features include a minimum of 15.4W to every 802.3af port and a minimum of 25.5W to every 802.3at port simultaneously, as well as plug-and-play capabilities.

Black Box ServSwitch Brand DVI-D USB KVM-Over-Fiber Extender

Black Box announced the ServSwitch Brand DVI-D USB KVM-over-Fiber Extender. Designed to connect control room monitors, keyboards, and mice to CPUs in a variety of applications, including factory, military, medical, and government imaging environments, the extender sends DVI-D and USB device signals over the same fiber cable.

Matrox Extio F2208

Matrox released the Extio F2208, a KVM extender for process control rooms and dispatch centers that uses a fiber-optic cable bus extension technology to control systems up to a kilometer away. The proprietary bus uses an included PCI Express card. It's able to support dual 2,560 x 1,600 monitors with uncompressed data transfer.

nlyte Software & Future Facilities Integrated Solution

nlyte Software partnered with Future Facilities to release an integrated data center infrastructure management and computational fluid dynamics solution. The offering adds simulation-based cooling capacity information to customers' capacity planning, enabling them to automatically populate a virtual model of their data center and calculate the available cooling for each rack or unit of equipment.

Perle FIPS 140-2-Validated Terminal Servers

Perle Systems announced that its family of Secure IOLAN Terminal Servers are now FIPS 140-2 validated. Pearle's Terminal Servers allow users to network devices with RS-232, RS-422 or RS-485 serial interfaces, which lets the devices interface with network server applications. The offerings now support SSL, HTTPS, and SSH for encrypting serial data over the network.

Staco FirstLine Battery Monitoring System

Staco announced the FirstLine BMS (Battery Monitoring System), which is designed to continuously monitor UPS batteries and to provide real-time information about them. The feedback is displayed on a 6.4-inch LCD touchscreen; elements tracked include battery cell and string voltage, battery string current, battery room temperature, battery cell impedance, and battery terminal temperature.

Tate ContainAire Vertical Partition System

Tate announced its ContainAire Vertical Partition System, which is designed to combine cost-effectiveness and ease of installation to create a highly flexible ceiling-mounted partition system for both hot and cold aisle containment. The Contain-Aire partition will reduce energy usage and improve capacity by separating cold supply and hot exhaust airflow.

Networking & VPN

Black Box Opti-WAN

Black Box announced its Opti-WAN appliance, which tweaks the transmission control protocol to optimize throughput. The company claims that the appliance utilizes three unique algorithms to generate a 30 to 500% increase in the speed of Web page displays. Opti-WAN operates from the server side and thus requires no client software or plug-ins.

Bomgar iPad Representative Console

Bomgar announced a collaborative remote support representative console called the Bomgar iPad Representative Console. Designed specifically for the iPad, the console has the ability to let IT support personnel access, view, and fix a remote computer or mobile device from an iPad or iPad 2. Features include the ability to chat with end users within the session, to begin a remote support session without the end user having any pre-installed software, to manage simultaneous support sessions, and to access and support unattended devices using Bomgar's Jump technology. The console complements Bomgar's stable of remote support tools that includes capabilities for BlackBerry, Windows Mobile, and Android devices.

Dell Desktop Virtualization Solutions

Dell Desktop Virtualization Solutions, or DDVS, is a suite of services that helps companies deploy and manage virtual environments. DDVS features a virtual desktop-as-a-service solution that hosts multiple virtual desktops using the Dell Cloud service. DDVS is designed to work with both in-office and mobile devices alike.

Dialogic BorderNet 2020 Integrated Multimedia Gateway

Dialogic launched its BorderNet 2020 Integrated Multimedia Gateway, which the company states offers 2.6 times the session capacity as its previous IMG 1010 Integrated Media Gateway. The 2020 IMG is suitable for building out VoIP infrastructure and letting service providers speed up the time to market for mobile value-added services or cloud-based services, Dialogic says.

FrontRange Solutions Discovery 9.1

FrontRange Solutions unveiled FrontRange Discovery 9.1 for auditing across multiple platforms and devices. Its primary features include asset tracking, WMI data query engine, an updated user interface, LANprobe improvements, enhanced access control security, support for DSM, and Active Directory integration. FrontRange Discovery 9.1 is compatible with FrontRange License Manager 3.2.

GigaSpaces Technologies Cloud-Enablement Platform

GigaSpaces Technologies released a second-generation cloud-enablement platform for PaaS and ISV SaaS. Primary features for this hybrid cloud-oriented solution include silo-free architecture (for central management and simplified deployment), cross-stack fine-grained multitenancy, built-in DevOps for lifecycle automation, and third-party multi-middleware support.

HP Mobile Access Solution

HP announced the HP Mobile Access Solution that the company says will increase performance and range on wireless networks by using advanced wireless access points. The product is said to deliver up to 15 concurrent high-definition videoconferencing sessions on a network; previous 802.11n offerings supported 10 sessions.

Juniper Networks PTX Series Packet Transport Switch

Juniper Networks announced the PTX Series Packet Transport Switch, a converged supercore switch designed to reduce complexity in the service provider by merging the core packet and optical network layers. Powered by the Junos Express chipset and operating system, the switch features scalability of up to 3,800 terabits and is designed to save 65% in costs compared to legacy architectures.

LightPoint AireLite G

LightPoint added the AireLite G to its high-speed outdoor wireless bridging product series. AireLite G offers full-duplex Gigabit Ethernet throughput, Power over Ethernet, built-in alignment telescope, integrated heater, and lens defroster. This AireLite G also meets laser class 1M eye-safety regulations.

Micro Focus SilkPerformer, SilkTest & SilkCentral Test Manager 2010 R2

Micro Focus released the Silk integrated testing suite, which includes SilkPerformer, SilkTest, and SilkCentral Test Manager 2010 R2. Silk Performer features enhanced AJAX load testing capabilities. SilkTest now supports Adobe Flash Version 5.x and Java AWT/Swing and includes enhancements to Micro Focus WorkBench. The Test Manager 2010 R2 features a goal-based test system.

Napatech NT40E2-1

Napatech announced its NT40E2-1 intelligent network adapter. This 40GbE network adapter features distribution, flow detection, and frame decoding for up to 32 CPU cores. The NT40E2-1 also supports packet capture and transmission using one QSFP-based 40GbE port.

Napatech Software Suite

Napatech released its Software Suite, which aims to simplify and speed up the development of new network appliances, the company says. Featuring a hardware abstraction and the ability to merge traffic from multiple adapters into a single stream, the Napatech Software Suite allows vendors to work up new products using the company's network adapters.

Nimbula Director

Nimbula announced details concerning its Nimbula Director. Using the company's Cloud Operating System technology, Director will offer Amazon EC2-like services to enterprises and service providers. Customers can manage on- and off-premises resources; various features include zero-touch installation of servers, a self-monitoring and self-healing distributed management control plane, self-service workflows, allocating individual customers full-featured Layer 2 networks, and more.

Novell SUSE Manager

Novell announced the availability of SUSE Manager, an advanced systems management solution designed to manage Linux distributions across physical, virtual, and cloud environments, including the SUSE Linux Enterprise Server. SUSE Manager is designed to reduce TCO of Linux deployments; simplify migrations; and offer better availability, mission-critical capabilities, and technical support quality.

OpenText Exceed onDemand 8

OpenText released Exceed onDemand 8, an X11 window server designed to offer fast, reliable, and secure remote access to applications over any network connection. Features include support for Mac OS X as well as several performance and productivity enhancements for distributing and managing access to Unix, Linux, and Microsoft Windows applications.

Opnet APM Xpert

Opnet added enhanced abilities to its APM Xpert solutions that extend application performance management to cover storage infrastructure. Opnet's AppInternals Xpert provides visibility into modern applications' complex software framework so applications can support all aspects of service assurance from the server perspective. AppInternals Xpert also monitors numerous storage vendors and uses a standards-based approach to collect performance metrics from storage network devices and arrays.

Quest Updates Foglight APM

Quest Software launched its updated Foglight application performance monitoring platform. Features include integration with Foglight Network Management System, enhanced user experience monitoring visibility, cross-platform database views, and expanded single sign-on support.

SafeNet Sentinel Cloud Services

SafeNet released Sentinel Cloud Services, a software licensing management solution delivered as a service for the cloud. The product allows SaaS and PaaS vendors to build and manage their service offerings; ensure service agreement compliance; and simplify the operational processes associated with cloud service contract provisioning, authorization management, and usage tracking.

Xen Cloud Platform 1.0

Xen.org just released its Xen Cloud Platform 1.0, a full-featured private cloud kit designed for small and medium-sized businesses. XCP 1.0 is an open-source server virtualization platform that consists of the Xen hypervisor, network and storage support, a management stack and tools, and support for Windows and Linux.

Storage

Aleratec 1:5 HDD Copy Cruiser IDE/SATA

Aleratec released the 1:5 HDD Copy Cruiser IDE/SATA, a standalone hard drive duplicator and sanitizer that sells for $1,249. It's able to make up to five duplicates of a

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2.5- or 3.5-inch SATA or 3.5-inch IDE drive simultaneously (2.5-inch IDE optional). It can also securely erase up to six drives at a time.

■ Bocada Prism Assessment Program

Bocada announced the release of its Bocada Prism Assessment Program, which allows its partners to provide customers with an in-depth look at their data protection environments and the status of their backup infrastructures. The program provides guidelines and training aimed at giving customers a more thorough understanding of their backup environment.

■ Buffalo Technology TeraStation Pro WSS

Buffalo Technology has launched a family of storage servers for SMBs. The TeraStation Pro WSS ($849.99 and up) uses Windows Storage Server 2008 R2. It's based on a dual-core Intel Atom processor, and it provides DFS replication and centralized management. Options available include RoDC support and SIS deduplication.

■ Coraid, Arista Networks Ethernet SAN Solution

Coraid and Arista Networks have combined products to create 10Gbps Ethernet SAN options for the data center. Coraid provides its EtherDrive storage arrays, while Arista supplies its 10Gbps switches. The resulting stack, the companies say, is faster than Fibre Channel and FC over Ethernet implementations with quicker storage deployment. At the same time, according to a statement, the Coraid and Arista combo costs about a fifth as much as FC gear. The two companies tout the scalability of the solutions, as well as their suitability for flexible, virtualized workloads.

■ Coraid EtherDrive VSX-Series

Coraid released the EtherDrive VSX-Series storage virtualization appliances, which support 1Gb and 10Gb Ethernet. Logical volume management makes it possible for users to modify virtual volumes and expand pools by adding EtherDrive units. VSX appliances support no-single-point-of-failure configurations and allow storage array mirroring to prevent network failures, the company says. The appliances also feature block-level data snapshots, with up to 4,080 LUNs and 256 snapshots per LUN. In addition, the system allows unlimited clones per snapshot. Finally, the Snap Shadow feature allows for asynchronous replication for disaster recovery.

■ Dataram XcelaSAN Model 100

Dataram released its XcelaSAN Model 100 acceleration appliance, which offers customers a fast, cost-effective way to boost the performance of high I/O applications in midrange SANs. The product improves I/O performance up to 30 times, according to Dataram, with block-level read and write caching. The SAN appliance includes mirrored RAID, hot-swappable components, and UPS protection.

■ InMage ScoutCloud

InMage's ScoutCloud platform serves as a physical-to-virtual and virtual-to-virtual data protection and recovery solution for managed service and cloud providers. ScoutCloud also features a portal that can be used for deployment and management to ensure users have the best possible data availability.

■ Kroll Ontrack Ontrack PowerControls 6.1

Kroll Ontrack released version 6.1 of its Ontrack PowerControls data management software. The latest edition supports Microsoft Office SharePoint Server 2010. Specifically, it can open and read SharePoint 2010 sources and connect to SharePoint 2010 targets. Version 6.1 also allows users to search across multiple file formats.

■ NovaStor NovaBACKUP Network 14.0

NovaStor released NovaBACKUP Network 14.0, the latest version of the Windows and Linux backup and disaster recovery application. NovaBACKUP now comes with a price-per-server licensing model that's inclusive of all available options and modules. The software includes workstation/server bare metal recovery, SQL and Exchange server agents, and optional library drive expansion.

■ NovaStor NovaBackup xSP & NovaBackup Remote Workforce 12.1

NovaStor released version 12.1 of its cloud-based NovaBackup xSP and NovaBackup Remote Workforce applications. The release includes FastBit 3, which NovaStor states enhances backup speed while lessening local cache sizes by more than 90%. FastBit 3 also includes integrated replication technology for real-time replication of data to multiple targets and an option to run local restores.

■ StoneFly StoneFusion 6.4.2.x

StoneFly announced StoneFusion 6.4.2.x, a Network Storage Platform. Enhancements include an encryption accelerator that boosts the performance of encrypted volumes on StoneFly IP SANs and a VSS Snapshot and Replication Manager that controls the VSS Snapshots and Replications to ensure data consistency when taking snapshots or initiating replication.

■ Transcend SSD18C3

Transcend released the SSD18C3, a portable SSD with a USB 3.0 interface. It's able to attain data transfer speeds of up to 260MBps, Transcend says. The ruggedized SSD18C3 comes with the company's One Touch backup system and various applications. It sells for $224 (64GB) or $448 (128GB).

■ SGI ArcFiniti

SGI has introduced ArcFiniti, a fully integrated disk-based data archive unit that's designed to help stop the problem of unstructured, file-based data sprawl. ArcFiniti features industry-leading tools for managing and protecting data repositories and offers high-performance network access that provides performance, accessibility, and long-term data integrity advantages over tape. ArcFiniti configures to more than 1.4PB of usable storage in a single rack, and users can access ArcFiniti via high-performance network connections for high-volume throughput into its primary disk cache. The cache is virtualized to the archive tier and managed

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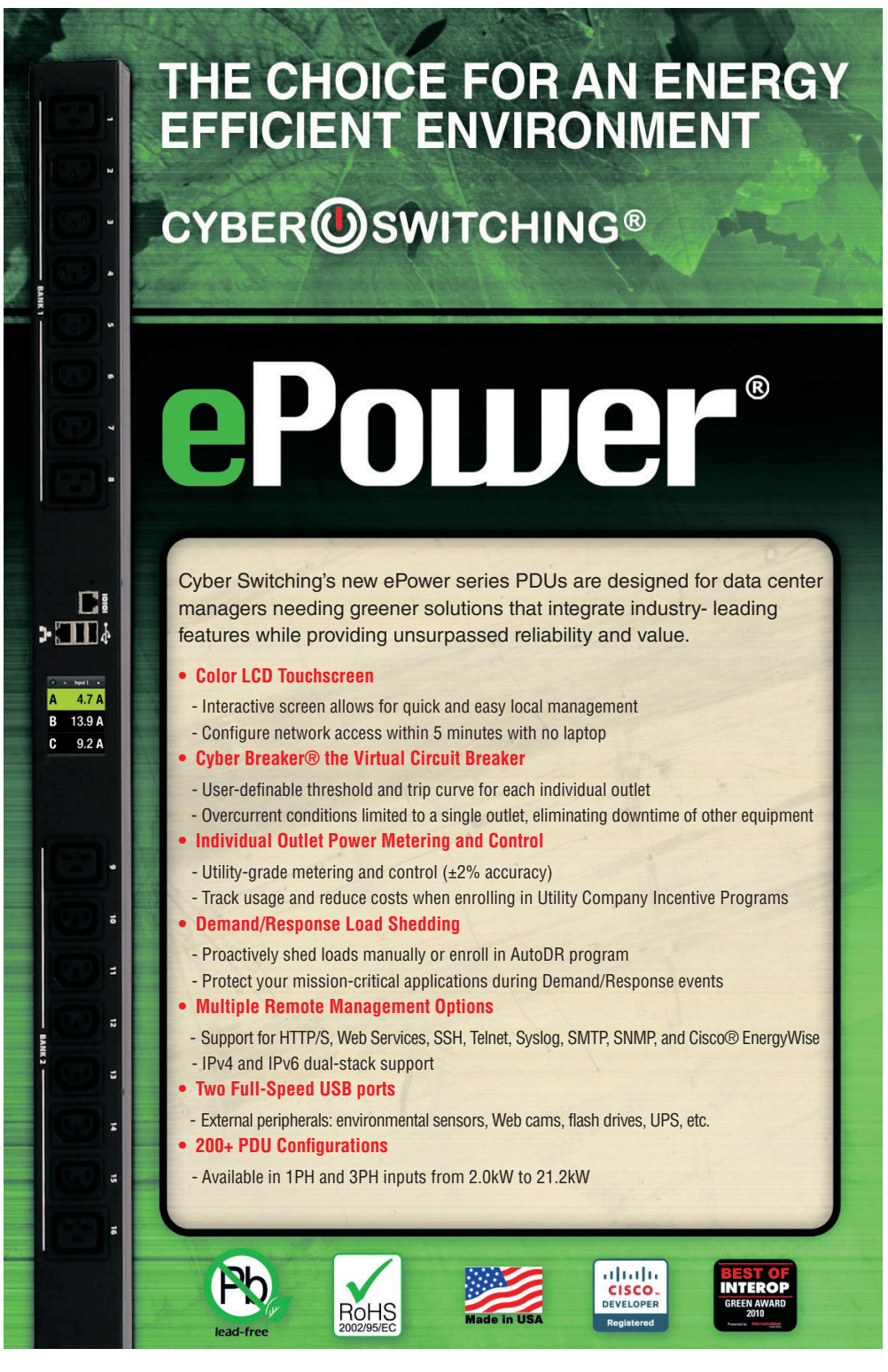

PRODUCT RELEASES

Continued from Page 7

in the background by an automated archive policy engine.

Security

■ Backbone Security StegAlyzerRTS

Backbone Security announced a 1Gbps-throughput version of its Steganography Analyzer Real-time Scanner, or StegAlyzerRTS. Developed by the company's Steganography Analysis and Research Center, the tool detects files secretly embedded within or appended to another file in such a way that it cannot be detected. The tool is designed to prevent the theft of personally identifiable information, protected health information, and intellectual property. Features include a library of more than 900 digital steganography applications; the ability to detect whenever insiders download one of the applications, which indicates that a particular individual is planning to steal sensitive data; and a unique signature-based steganography detection model. For more on this product, see page 29.

BACK BONE SECURITY
STEGANOGRAPHY ANALYSIS AND RESEARCH CENTER
SARC
RAISING THE THRESHOLD OF PERCEPTION

■ eEye Digital Security Retina Cloud

eEye Digital Security announced the launch of Retina Cloud, a cloud-based security and compliance service providing external PCI (Payment Card Industry) and vulnerability scans. The service allows organizations to remain in compliance with the PCI DSS, and external vulnerability scans allow organizations to gain an outsider's view of their vulnerabilities, thus providing insight into what an attacker might see when attempting to penetrate the organization's network. In a complementary release, eEye announced more than a dozen Retina vulnerability audits that can be used to determine whether employees are using unauthorized, cloud-based file-sharing applications.

■ Imperva SecureSphere 8.5

Imperva released SecureSphere 8.5, which includes SecureSphere Agent Technology to help protect against insider threats. Windows File Server agents are a new deployment option; capabilities include privileged user monitoring, visibility into user identities and activity, and support for auditing distributed file servers. SecureSphere 8.5 also features agent-based monitoring/auditing for DB2 z/OS mainframes.

■ M86 Security M86 SMB Security Suite

M86 Security released the M86 SMB Security Suite, which aims to supply organizations with up to 500 users with enterprise-quality security. It provides protection against misuse of sites such as social networks through quota management and content inspection. The suite also features antispam protection, content and policy management, and support for user-selected antivirus.

■ Reflex, Lunarline CCMR

Lunarline and Reflex Systems have teamed up to deliver a more comprehensive Lunarline Continuous Compliance Monitoring and Reporting platform, which lets users take advantage of cyber asset management, continuous FISMA and NIST compliance monitoring, and cybersecurity risk management. CCMR also lets users keep track of operational and technical security controls, enables compliance, and minimizes vulnerabilities.

Messaging & Telephony

■ Acme Packet Net-Net ISR & Net-Net ASC

Acme Packet released the Net-Net ISR (Interactive Session Recorder) and the Net-Net ASC (Application Session Controller). The products support unified communications, Web 2.0 applications, and IP session recording. Net-Net ISR uses an open and active recording system to simplify PBX and IVR interconnections. Net-Net ASC lets applications control interactive IP sessions using SOA development tools.

■ Adtran NetVanta Unified Communications For Cloud Applications

Adtran recently announced that users of Adtran's NetVanta Unified Communications can now deploy their solutions in virtual environments using VMware. The added ability will let partners and customers use NetVanta UC in more business and deployment ways and will allow for using applications that require more portability and flexibility. For example, service providers and resellers can offer NetVanta UC-based hosted solutions to their customers, enterprises can increase space usage efficiency and reduce physical servers via server consolidation, distributed enterprises can offer UC abilities to branch locations, and companies can geographically separate hosted virtual disaster recovery servers from the company's business location.

■ Alcatel-Lucent Application Fluent Network

Alcatel-Lucent introduced a line of edge solutions that it says are designed to support advanced devices and applications to create a new generation of enterprise communication and collaboration services. Solutions included in the Application Fluent Network are the OmniSwitch 6850E LAN switch, 24-port PoE+ module for OmniSwitch 9000E modular LAN chassis, and the Alcatel-Lucent Operating System.

■ BroadSoft BroadCloud Video

BroadSoft made its BroadCloud Video commercially available. BroadCloud Video provides an "HD, always available videoconference service" for business users to use from desktop and room telepresence settings. In addition to 720p or higher video quality, BroadCloud Video supports HD-quality sound and provides a permanent bridge code allowing for one dial-in number and host PIN for all meetings.

■ Cisco Unified Communications 300 Series & Unified CM Business Edition 3000

Cisco launched the latest components of its small and midsized business-oriented Cisco Unified Communications offerings, including the small business-focused Cisco Unified Communications 300 Series and the midsized business-focused Cisco Unified CM Business Edition 3000. Cisco also announced its sales productivity initiatives: the Cisco Partner Advisor and Cisco WebEx Meeting Center.

■ Cisco Jabber

Cisco introduced its latest unified communications application, Jabber, which is capable of presence, instant messaging, voice and video, voice messaging, desktop sharing, and conferencing on smartphones and desktops. Cisco Jabber integrates with video endpoints such as Cisco Unified IP Phones, Cisco WebEx MeetingCenter, and Cisco TelePresence connections.

■ Cisco ūmi

Cisco announced it plans to expand its ūmi product line to support TelePresence video meetings between consumers and businesses. This includes Cisco ūmi Connect, Cisco ūmi 720, and Cisco ūmi 1080. The ūmi 720 and 1080 both come with HD cameras and can be connected to HD televisions for high-quality videoconferencing.

■ Falcongaze SecureTower 2.3

SecureTower 2.3 from Falcongaze enables full administering of internal and external message sessions going through corporate email servers based on the Microsoft Exchange Server 2007/2010 platform. Incoming and outgoing messages, as well as internal correspondence of company's employees, are checked to comply with specially defined corporate security policies.

■ Sherpa Software Mail Attender 4.7 For Microsoft Exchange

Sherpa Software released Sherpa Software Mail Attender version 4.7 for Microsoft Exchange environments. The solution improves management capabilities for Exchange 2010 desktop PST files by allowing administrators to automatically scan PST files that are located on user desktops to determine the owner of the PST data and report on it.

Servers

■ Supermicro SuperServer 5086B-TRF & GPU SuperBlade

Supermicro announced its SuperServer 5086B-TRF Eight-Way Enterprise Server and its GPU SuperBlade system. The SuperServer 5086B-TRF features up to 64 Xeon processor cores for up to 2TB of DDR3 memory, support for up to four GPUs, and 10 PCI-E expansion slots. The GPU SuperBlade can support up to 20 GPUs in a single 7U blade enclosure, offers support for two Nvidia Tesla GPU cards, and more. In addition to its server solutions, Supermicro also announced a 24-port 10GbE switch, a SuperServer 6064T-TUF system, and a SC732 desktop chassis for the enterprise.

Clients

■ Clerity Solutions Automated Assembler Conversion Tools

Clerity Solutions released a suite of automated conversion tools aimed at helping developers migrate Assembler application components to more maintainable COBOL code. Meant for modernizing legacy applications, the suite utilizes analysis of the Assembler code, development of a design and project approach, incremental methodology during implementation, and a testing phase.

■ Datacard CD800 Desktop Card Printer

Datacard announced its CD800 Desktop Card Printer designed for "enterprise-class printing." The CD800 supports speeds of 220 full-color cards per hour or 165 double-sided cards per hour. It also features TrueMatch technology for color matching capabilities and TruePick technology to prevent card jams.

■ Datacard Group SD360

Datacard Group announced the Datacard SD360, a desktop card printer designed for more efficient ID card issuance. Features include automatic two-sided printing, TrueMatch color matching technology, and TruePick anti-jam card handling. The printers are Energy Star-qualified and feature recyclable packaging.

■ Eurocom Mobile Server & Mobile Workstation Intel Xeon X5690

Eurocom announced that it is now supporting the Intel Xeon X5690 processor in its Mobile Server and Mobile Workstation notebooks. The notebooks are built to customers' specifications. The company's high-performance Panther laptops will offer the 3.46GHz X5690, along with 3.25TB of storage, a built-in UPS, GbE, and 17-inch LCD. Triple-channel DDR2 memory is supported.

■ ExtraHop Application Delivery Assurance

ExtraHop Networks announced that it now supports IBM DB2. The DB2 addition will give the ExtraHop Application Delivery Assurance system the ability to support IBM, Oracle, and Microsoft—the three companies that accounted for more than 87% of 2009 worldwide revenues for the relational database market, according to Gartner. With the update, ExtraHop now supports all seven major enterprise databases.

■ Giada A50 Mini PC

Giada recently announced the availability of its new A50 Mini PC. The computer features a dual-core AMD Fusion E-350 (1.6GHz) processor. Other features include support for up to 4GB of DDR3-1066 memory; a 1TB maximum 2.5-inch hard drive; and ATI's Radeon HD 6130 GPU, which supports full HD 1080p playback as well as DX11. The A50 sports four USB 2.0 ports; one USB 3.0 port; HDMI, VGA, and RJ-45 ports; and a built-in card reader. It also comes with a remote control. For more on this product, see page 38.

■ Lenovo ThinkCentre M91p Desktop

Lenovo just released its ThinkCentre M91p desktop PC, which is a business-oriented computer capable of tackling even the most demanding workloads. Lenovo offers the ThinkCentre M91p in a tower, SFF (small form factor), and eco SFF versions to accommodate nearly any application. The PCs feature several cutting-edge technologies designed to enable users to complete tasks more quickly, such as SATA III for 6GBps hard drive performance, USB 3.0 for SuperSpeed USB peripherals, support for up to four monitors, and support for Intel Core vPro processors. The ThinkCentre M91p desktop will be available in April, starting at $899.

■ Lenovo ThinkPad X220

Lenovo announced the release of its ThinkPad X220 ultraportable laptop.

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Features include an available external battery that allows for 24 hours of battery life, voice and video calling capabilities, an Intel Core i7 processor, and more. The X220 is available as a laptop or as a tablet.

■ Oracle PeopleSoft Mobile Inventory Management

Oracle announced its PeopleSoft Mobile Inventory Management, which is designed to help improve inventory accuracy and labor productivity by automating mobile inventory transactions for users of Microsoft Windows-enabled mobile devices and handheld scanners. Users can enter and access information on inventory availability, process receipts and issues, and do physical inventory counts without having to change their station or work location.

■ Red Hat JBoss Enterprise Data Services Platform 5.1

Red Hat released the latest version of its JBoss Enterprise SOA Platform. Version 5.1 features Apache CXF Web services stack; JBoss Developer Studio 4.0; technology previews of WS-BPEL and Apache Camel Gateway; and updated certifications for Red Hat Enterprise Linux 6, Windows 2008, IBM, JDK, and more.

■ Software AG Cloud Ready

Software AG's Cloud Ready solution is designed to bring business and technical stakeholders together to collaborate on process transformation quickly. Software AG Cloud Ready includes process design and strategy, process management, integration, and governance in the cloud. Users of webMethods BPMS, SOA, and integration have the option to run their development, test, and production environments in the cloud.

■ Software AG IT Modernization

Software AG announced its process-driven IT Modernization solution, which introduces a complementary collection of products and services designed specifically to align business and IT concerns. The IT Modernization solution adds process intelligence and best practices and also offers specific targeted services to the complete product suite to help organizations achieve satisfactory business process.

■ Tyco Electronics Elo TouchSystems 2400LM Touchmonitor

Tyco Electronics announced the release of its Elo TouchSystems 24-inch 2400LM Touchmonitor, which is UL60601- and IEC60601-certified and features an IPX-1 drip-proof rating. The 2400LM Touchmonitor is designed for medical and non-medical environments and includes multiple mounting options.

■ Unify Team Developer 6.0

Unify released version 6.0 of Team Developer to make it faster and easier for developers to deliver business applications for the Microsoft .NET Framework and WPF (Windows Presentation Foundation) graphical subsystem. Team Developer creates interactive Web and Desktop applications that leverage WPF controls (XAML) customization to deliver an engaging, interactive application experience.

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cloud when they need to. A related problem is jumping into the cloud without making sure that the vendor supports infrastructure-specific elements in the company's environment, such as Active Directory or LDAP servers for authentication.

> "To assess if a cloud solution will meet your business need, you should 'try before you buy.'"
>
> *- Skytap's Sundar Raghavan*

To avoid such problems, he recommends investigating the opportunities a particular vendor offers for securely downloading data on-premises, as well as what technologies are in place to make the user experience seamless across disparate applications such as CRM, email, and document management services. He also suggests finding out whether you can manage your credentials from a single service or an existing on-premises Active Directory or LDAP server.

Clouds Are Vulnerable, Too

Lack of due diligence when it comes to the cloud can raise plenty of security issues, explains Margaret Dawson, vice president of marketing and product management at Hubspan (www.hubspan.com). Businesses new to the cloud service realm might not realize the importance of evaluating these services just as they would any traditional on-premises product, but this process is critical to ensuring that your data remains safe in the cloud.

"You need to make sure [the provider's] security covers several key areas, such as end-to-end encryption [not just when the data is in motion], access control rules, identity management, etc.," Dawson says. "Also, ask about security at the infrastructure level. We often forget that behind every cloud solution is a good, old-fashioned data center with physical security issues. How do they manage network security, data protection, and access controls in the data center that is running the cloud solution?"

Permanent Data Loss

According to Vineet Jain, CEO of Egnyte (www.egnyte.com), the risk of permanent data loss perpetually haunts users of cloud services. If data disappears and no backups are available, a company faces a potential catastrophic situation, but this problem can be avoided by determining early on if the service provider's architecture allows for only temporary data loss—in other words, temporary inaccessibility due to software and/or hardware failure, but eventually the files can be made available.

When considering a cloud service, determine how well your data is protected in the cloud, including how many copies exist, where they are kept, whether they are kept across multiple locations, and whether encryption at rest is used. Jain also advises asking if the vendor provides access to your data if your Internet connection is lost or if the vendor's service itself is down. Finally, investigate the vendor's support (is it 24/7?) and how easy or difficult it will be to retrieve your data from the vendor's servers if you decide to cancel or change the service.

Relying On Assumptions

Seeing the cloud work for other companies can lead to a strong assumption that the cloud will work for your company. But although the cloud might indeed work for you, not all services are the same, and some might be downright wrong for your environment. Sundar Raghavan, chief product and marketing officer at Skytap (www.skytap.com), notes that it's an urban myth that because a cloud service works for one company, that same service can be successful when in use at another company. Instead of making that assumption, he says, take some steps to determine if a service will actually work for you before committing.

"To assess if a cloud solution will meet your business need, you should 'try before you buy'" Raghavan says. "Most cloud solutions offer this flexibility. If not, that's your first hint. Maybe the cloud solution you are looking at requires too much capital and time investment, and that's not ideal. If a cloud solution is not usable from Day 1 for your business need, or you cannot get granular visibility reports, that's a huge indication the particular solution you are looking at is not likely to be a long-term fit."

In addition, Raghavan recommends finding answers to a bevy of questions to help pin down that long-term fit. For example, what is your company's unique need, or use case, for the cloud? Does the offering deploy as rapidly as you need, and are your users empowered? Does the service let your users conduct business without any major training? Does the service provide usage reports and control mechanisms? P

Top Problem: Failure To Consider Bandwidth

One of the most widespread cloud-related problems is the failure to realize your network might be incapable of handling cloud service requirements. According to Bill Abram, founder and president of Pragmatix (www.pragmatix.com), companies don't always properly judge the bandwidth requirements of and the latency introduced by some cloud interactions, even though systems may need to be completely redesigned to work in a higher-latency environment.

Abram recommends running a pilot test with a few users before switching everyone over to the cloud service. "As much as possible, roll out a fully functional test environment of your cloud-enabled systems," Abram says. "Run as fully production-like as possible to identify problems ahead of a full production changeover. It is important to scale systems to as close to production volume as possible, as some issues may not appear except at high transaction volumes."

> "Small businesses usually run very lean IT operations, which means network changes are a lot more on-demand and tactical rather than strategic. So network changes can often lead to security lapses [or backdoors left] open."
>
> *- WaterlooSecurity Ltd.'s Fernando Duran*

Continued from Page 1

your firewall was in keeping hackers at bay," Sachdev explains.

IT managers with limited security staff could choose to hire a third-party security company to conduct vulnerability scans against the firewall, says Fernando Duran, CTO at WaterlooSecurity Ltd. (www.waterloosecurity.com). "There are several vulnerability scanners, but their reports can be overwhelming to interpret if you are not an expert," Duran says.

Even with contracted security help, however, IT managers must be aware of all enterprise hardware—such as the Web server or database servers—that has contact with the Internet and the business reason for that contact. To avoid security woes, if there's no business reason for the contact, the server shouldn't be linked to the Internet, Duran says.

Network Changes

IT managers will also need to assess security when instituting network changes, which can impact overall enterprise security, Duran says.

"Small [and medium-sized] businesses usually run very lean IT operations, which means network changes are a lot more on-demand and tactical rather than strategic," he says. "So network changes can often lead to security lapses [or backdoors left] open for intruders and hackers."

One common mistake is that temporary access provided for a particular reason isn't revoked, Sachdev says. "For example, a lot of administrators disable certain firewall rules as a troubleshooting step, but [they] forget to enable those rules again leaving open access to vulnerable targets," he says.

Whether they are intended or not, network changes can expose new services and network devices to the Internet, thereby introducing a new area for hackers to attack, Duran explains.

Network design plays a role in keeping enterprises secure, as well, Duran adds. Design flaws, such as allowing for local network congestion or failing to separate local networks, can also expose the networks to security compromises.

On The Defense

In addition to monitoring for threats against the firewall and assessing changes to the network, enterprises can take a number of other defensive measures to protect against security threats, Duran says. IT staff should assess those measures regularly to ensure that they will still be up-to-date and pertinent, Duran adds.

IT managers must also ensure that a good recovery plan is in place. Duran says this can be accomplished with backups. A good backup system should back up data automatically at set intervals and should be located offsite, to protect it from theft or natural disasters. You will also want to schedule the backup to run frequently so that a minimum amount of data would be lost if an outage were to occur.

"Check your backup periodically. You don't want to find out after a disaster that the [data] cannot be recovered," Duran says.

In addition, Andrew Wyatt, COO at security software maker Clearswift (www.clearswift.com), explains that IT managers need to stay on top of trends and changes, such as the use of social networking tools.

Social networks aren't going away, and, in fact, more enterprises are coming to rely on them for their marketing efforts, Wyatt says. For that reason, IT departments can't just lock down Facebook, Twitter, and similar social networking sites to keep their employees from accessing the sites and potentially sharing secure data.

Wyatt recommends that managers also investigate third-party Web and email software that automatically scans outgoing messages sent via email, social network sites, and other methods for information that violates security rules, as specified by IT managers.

The most important security measure an IT staff can have in place is a clear security policy that all employees understand and comply with. Wyatt says IT staff should refer to the policy often, to ensure it is as current as possible within this quickly changing IT landscape. P

Before The Breach

Detecting security compromise after the fact can be tricky and time-consuming, says Joe Fisher, president of Affinity IT Training (www.affinity-it.com). He recommends both intrusion detection and prevention software. The prevention software can stop a breach before it happens or alert IT staff to suspicious activities, which is cheaper than plugging a hole after it's detected and important data breached.

Fisher says to keep in mind that the effectiveness of even this type of software can be compromised if it's installed into an environment that is already compromised.

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News

Survey: SMBs See Social Media In Their Futures Despite Uncertainty

A recent survey from research firm Techaisle shows that 70% of small businesses intend to implement some form of social media in the coming year; however, 45% of respondents say they're not sure how social media technologies will benefit their businesses. The survey gathered information from more than 400 U.S. small businesses, categorized as companies with fewer than 100 employees, and highlighted uncertainty among SMBs concerning the ROI of social media. Despite that uncertainty, though, 36% of the small businesses surveyed already employ Facebook, 35% have Twitter accounts, and about 84% say these tools have increased awareness of their businesses.

SMB Cloud Software Spending To Increase

According to a survey by cloud storage provider Egnyte, 74% of SMBs are planning to spend more on cloud software this year, while 51% plan to spend more on collaboration software. Just 2% were specifically not planning to increase spending on cloud-based software, and just 6% had no plans to increase spending on cloud-based collaboration tools; the rest of the respondents aren't yet sure of their spending plans for this year. Spending increases may be due in part to companies catching up on tech investments after halting or seriously cutting back on spending because of fears or uncertainty about the economic climate.

Mobile Apps Don't Comply With Open-Source Requirements

More than 70% of Android, iPhone, and iPad apps containing open source don't comply with basic open-source license requirements. That's according to OpenLogic, which recently conducted a scan and license compliance assessment of 635 leading mobile applications. OpenLogic used its OSS Deep Discovery scanner to reach its results, scanning for compiled binaries and source code where available to identify open source under GPL, LGPL, and Apache licenses. Of 66 apps scanned containing Apache or GPL/LGPL licenses, 71% didn't provide GPL/LGPL source code, an offer to get it, or a copy of the license. The apps also didn't provide a copy of Apache licenses or provide notices/attributions for Apache licenses. "App developers need to pay attention to open-source license compliance to ensure their apps are not impacted by legal actions," says Kim Weins, senior vice president of products and marketing at OpenLogic.

Survey Looks At Meaningful Use Goals

About a third of companies involved in health IT services believe that some measures and objectives of Meaningful Use Stage 2 related to the electronic medical records requirements are too aggressive. The survey was conducted by the Meaningful Use Workgroup of the Health IT Policy Committee. However, respondents generally believe those goals are achievable by 2012. The nine Stage 2 items included syndromic surveillance, drug formulary checks, medication reconciliation, patient access to health information within four days, submission of immunization data, and the capability to exchange key clinical information. Respondents also voiced concern that the Meaningful Use measures implemented should be ones that are within the scope of a provider's control.

COVER FOCUS

Sidestep Common Virtualization Problems

Get Your Virtualization Strategy On Track By Being Proactive

by Elizabeth Millard

VIRTUALIZATION CAN BE A BOON to an SME, but the technology can also be a burden if problems and issues crop up on a regular basis. As with any IT implementation, being proactive is far better—and often less costly—than taking a reactive approach, and understanding common concerns, such as the ones outlined below, can help enterprises avoid making the same missteps.

Failure To Transition Security Best Practices

The hypervisor layer introduces a new layer of software that needs many of the same security precautions the servers themselves have always had, notes Brian Anderson, CMO of BeyondTrust (www.beyondtrust.com). But organizations often fail to transition security best practices already in place for individual servers through the virtualization project. "In most virtual environments today, IT staff can mount data to the hypervisor as an easy way to gain unlimited, unsupervised access to steal entire databases undetected, while in a traditional environment, this wouldn't be possible," he says.

Key Points

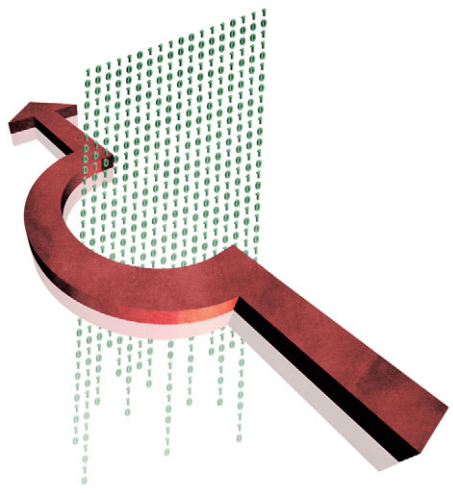
- Consider increasing security budgets, rather than reducing them, to address additional protection for virtualization software.
- Follow through on security best practices and create strong policies for privileged access.
- Staff up where needed before bringing in virtualization, but also boost expertise in the field among existing staff.

To avoid the problem, organizations need to carry through with the same best practices, policies, and governance processes they had in traditional servers and implement those on the hypervisor layer, Anderson advises. Part of these best practices entails creating polices and processes for privileged access (see the "Top Problem: Forgetting Privileged Access Policies" sidebar for more information), monitoring user behavior on the hypervisor, and having the tools in place to identify suspicious behavior.

Enterprises Are Tempted To Reduce Security Budgets

Virtualization projects are often driven by a need to reduce costs because the organization can dramatically downscale the amount of hardware it's purchasing and maintaining, according to Anderson. "What happens is the organization wants to scale down security costs, as well, to match the reduction in hardware costs, when the security budget actually needs to increase to protect the additional layers of software."

The biggest mistake that Anderson sees in virtualization projects is that reductions in the security budget mean protections get lost in the process, because the mindset is that security costs should maintain the same proportional relationship with hardware costs. He advises a boosted security budget instead to prevent thorny security issues from cropping up after implementation.



Risking Virtual Machine Sprawl

A significant and very common problem with virtualization is virtual machine sprawl, says Scott Morrison, CTO of Layer 7 Technologies (www.layer7tech.com). "It's very easy to create new virtual machines," he says. "However, they take up very large amounts of disk space and often have little more than a file name to identify what they are."

Even people doing casual virtualization on their laptops quickly run into this issue, he adds. Management tools are emerging to tame the sprawl, and IT managers should investigate whether these might work in their environments. Also, Morrison adds, implementing storage solutions with deduplication technology has an enormous effect on cutting down on virtual image storage costs because actual differences between images are usually very small.

Underestimating Storage Needs

Many enterprises underestimate the impact that virtualization has on storage, particularly storage-area networks, says Joe Polastre, CTO and co-founder of Sentilla (www.sentilla.com). He notes that the increased demand for storage often results in large capital purchases for storage and a lack of power capacity to house these cabinets.

To prevent storage problems, an enterprise should look at storage that's designed specifically to be used in managed environments.

Isolation Between Running Virtual Images

Isolation between running virtual images can become a major issue when trying to implement virtualization, Morrison notes, adding that network engineers are very good at creating zones of trust using physical network infrastructure, hardware, and VLANs, but in large virtual environments, this process is less straightforward.

"Often the engineers creating the virtual networks are different from the group doing physical networking, and the former often use very different tools and paradigms that the latter are not familiar with," he says. "This causes discontinuities in network security, SLAs, and so on. As virtual networking becomes increasingly popular, and increasingly sophisticated, this will be a significantly growing problem."

Prevention can come in the form of training for existing engineers in virtual networking so a schism isn't created between physical and virtual networking approaches and staff members. There are also technology solutions that can help create application-layer isolation between zones.

Choosing A Solution Based On Technology, Not People

The biggest problems that come with choosing a virtualization solution aren't technical; instead, they center on people, policies, and processes, Morrison says. He believes that organizations too often leap into virtualization and bypass their current brain trust.

"It's common to staff up new virtualization groups that replicate existing roles and responsibilities but focus on the new virtualized environment," he says. "While this can be good because it breaks from status quo and may bring a new agility to IT, it causes problems with existing staff and often weakens good existing process and policy around security, SLA, best practices, and workflow."

He advises enterprises to staff up as needed, but also to grow virtualization out of existing staff. Network engineers may see virtualization as a threat because it simplifies physical wiring, he says, but they may also see it as a career opportunity if they can learn about the technology and bring traditional rigor to virtualized networking. P

Top Problem: Forgetting Privileged Access Policies

Security issues weren't as critical when organizations were virtualizing less-critical servers, notes Brian Anderson, CMO of BeyondTrust (www.beyondtrust.com). However, many organizations are now virtualizing even their most sensitive servers without implementing the appropriate tools for administrator access.

"From a privileged access perspective, the issue is also exacerbated by the fact that heavily virtualized environments tend to grant each individual administrator access to more virtual servers than they previously had to physical servers," he says. "More access entails a greater risk, and when best practice polices and processes also drop off, then it's dangerous."

Anderson advises enterprises to put controls in place for admins to ensure that nothing outside of corporate policy or government regulations is even possible.

Bypass Networking Obstacles

Avoid Common Visibility, Management & Hardware Problems

by Carmi Levy

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As the number and complexity of services supported by the typical corporate network continues to expand, it becomes ever more critical for IT to avoid network glitches. Fortunately for shops trying to get a handle on network performance, the lowest-hanging network performance fruit is also the most easily resolved.

Lack Of Visibility Into Network Performance

Inadequate network management tools and processes can keep IT from understanding what's going on before it's too late. Often, basic connectivity hardware that did the job when the network was small will fail to keep pace as more devices are added and supported services become more complex.

Key Points

- Rapid growth of integrated multimedia applications is placing ever greater pressure on network infrastructure.
- Equipment that proved adequate in years past will likely fail to keep pace in the years to come. Future-proof network upgrades by anticipating tomorrow's applications.
- Cheap equipment almost always costs more in the long run thanks to reduced manageability and performance. Higher-end hardware drives lower TCO.

"As the network grows, cheap, unmanaged switches are not scalable and therefore do not accommodate the needs and problems that may arise in larger networks," says Sven Rasmussen, networking solution architect at CDW (www.cdw.com). "The lack of visibility on network performance for a 100-user network can turn a minor problem, like a failing network interface controller, into a broadcast storm that can bring down a network."

To fight visibility problems, Rasmussen recommends investing in managed switches to lay the proper foundation for greater visibility.

Disconnected Management Tools

Although network and infrastructure management tools have been around for decades, patchwork implementation of various tools over time can result in silo-based monitoring that fails to keep pace.

"Everybody has tools," says Bill Cannon, vice president of strategic sales for Monolith Software (www.monolith-software.com). "The problem is they're not tied together and they were never built for end-to-end visibility. This limits your ability to address issues before they become problems."

Cannon says a disconnect in management tools can also result in finger-pointing as stakeholders assign blame for complex problems whose root causes aren't immediately understood.

To streamline your network management, experts recommend collapsing your inventory of management tools. Instead of managing multiple instances of tools with disparate interfaces and administrative requirements, transition to single-pane-of-glass, fully integrated management tools. This approach can increase agility by helping IT proactively spot and respond to performance trends. It can also reduce training, licensing, and maintenance costs.

Outdated Infrastructure Supporting Next-Gen Services

Network upgrades often fall short when they fail to accommodate future services such as IP telephony, collaborative applications, and other high-bandwidth services.

"Both Gigabit and Power over Ethernet are often overlooked features when expanding or upgrading a network," Rasmussen says. "Although these features add a little more to the cost of the network, they'll save a company from having to do a forklift upgrade when they implement IP phones or a wireless 802.11n network later on."

When architecting a network upgrade project, don't just focus on the services already in place today. Instead, build an application services roadmap to ensure the new infrastructure can handle tomorrow's demands.

Tacked-On Security

Organizations that don't bake in security up-front are at greater risk of breaches and incursions. Jack Gold, founder and principal analyst at J.Gold Associates, says adding it in later on is the wrong approach.

"Don't scrimp on the security aspects of the network," he says. "Many companies try to add on security afterwards. They shouldn't."

Gold recommends working directly with vendors at all phases of an upgrade to ensure that security is built into all layers of the proposed network. Adding it in after the fact will be much more expensive—and less effective.

Not Enough IP Addresses

Thanks to headlines heralding the dwindling number of IP addresses on the open Internet—and the growing adoption of IPv6—corporate awareness of the need for headroom is also increasing. Unfortunately, organizations running class C networks are limited to 254 IP addresses, which is problematic as the number of connected devices continues to mushroom.

"Growing networks can use up IP addresses pretty quickly, and once a company gets to 254 hosts, they'll need to create a new network or subnet," says CDW's Rasmussen. "In order to communicate from one subnet to another, they'll need to route between the two subnets."

To fight complexity, implement Layer 3 switches to allow easy routing between subnets and significantly boost IT's confidence that it won't run out of IP addresses anytime soon.

Underwhelming Wireless Performance

Wi-Fi networks often fail to provide anywhere near the expected throughput because IT shaves the budget when purchasing access points. While 802.11n-based devices can work on both 2.4GHz and 5GHz frequencies, bargains on 2.4GHz-only units can result in disappointing network performance.

That's because one of the key properties of the 802.11n wireless protocol, where two 20MHz channels can be combined into a wider 40MHz channel in a process called channel bonding, is severely constrained on 2.4GHz routers and access points. Rasmussen says this is because only 11 frequencies are available at the lower frequency, and only three of them are non-overlapping. The result: Bargain 2.4GHz-only equipment generates far more interference between access points trying to use the same channels, which limits the number of deployable access points and the distance over which they can be spread out.

In comparison, 5GHz radios have 23 non-overlapping channels, which has a tremendous impact on channel bonding-based performance. Therefore, you should specify only dual-band access points when deploying 802.11n and ensure that all access points are configured to operate at 5GHz. P

Top Problem: Inadequate Resourcing

Networks were once akin to invisible pipes that barely merited IT's attention. As demands on them continue to multiply, shops need to increase their networking focus—and budget—accordingly.

"Many companies underestimate the amount of effort involved in maintaining a network, and even more so in upgrading it," says Jack Gold, founder and principal analyst at J.Gold Associates. "Don't assume it's a trivial task."

Gold says shops without deep networking competencies should hire qualified third-party providers to upgrade and maintain the network most efficiently and with the least impact.

News

Cost Savings Gained From Offshoring Continue To Decline

New research shows that offshoring is no longer as profitable as it used to be, but that companies will continue to expand their use of the practice. The findings are part of the sixth annual "Taking Offshoring to the Next Level: The 2009 Offshoring Research Network Corporate Client Survey Report," a study of third-party outsourcing and captive center operations conducted by The Conference Board and the Center for International Business Education and Research's Offshoring Research Network at Duke University's Fuqua School of Business.

Average cost savings of 38% measured 10 years ago have dropped to 27%, the survey revealed, including a five-year slide in IT services and software development savings. However, average savings have increased in outsourced administrative and innovative areas.

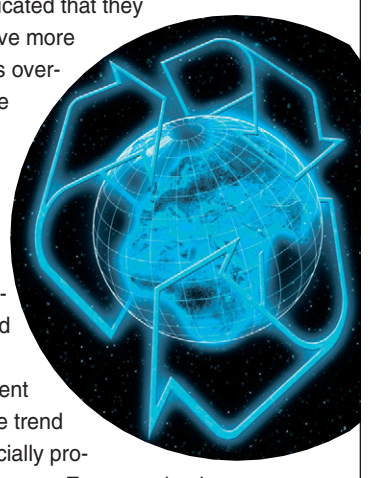
There's also a growing trend among high-tech and telecommunication companies toward using local providers instead of captive entities to launch new operations, the report says. Manufacturers follow this trend, as well, albeit to a lesser extent. Sometimes captive operations are but a stepping stone to third-party vendors, giving companies a way to dip their toes in the pool before jumping in with both feet, according to the study.

That said, competition is being spiced up by new regions seeking work from businesses beyond their borders, although relative skill sets and infrastructure quality play a role in the value proposition potential new regions can bring to the table.

Security and "lack of acceptance from internal clients" are offshoring risks that are growing in importance in the minds of business decision makers, the survey says. However, the quality of the services provided remains a concern to about the same number of respondents as in the previous couple of years.

Outsourcing Still Part Of The Plan

Despite tightening margins, many businesses still plan to grow their globally sourced operations. More than half of the organizations surveyed indicated that they would move more operations overseas in the next year and a half to two years, especially in IT, innovation, and software development areas. The trend was especially pronounced among European businesses.



Motivations differ, of course. Manufacturers and financial service providers cite cheap labor as a major factor in their outsourcing decisions, while "organizational flexibility" entices purveyors of retail and consumer goods, the report says.

Offshoring has a domestic effect, too. To a greater extent among U.S. companies than European firms, the greatest number of jobs lost to overseas providers involve call center and administrative positions.

by Marty Sems

News

NetApp To Acquire Engenio

NetApp announced it will acquire Milpitas, Calif.,-based Engenio, a manufacturer of storage arrays designed specifically for high-bandwidth applications such as video processing. Engenio is currently a part of LSI Corp. NetApp says that by incorporating Engenio into its business, the company will have presence in new technology areas such as full-motion video capture and digital video surveillance. NetApp says it will pay $480 million for Engenio and expects the deal to close within the next 60 days.

FTC Reports Top Consumer Complaints

The U.S. Federal Trade Commission reports that identity theft was the most popular consumer complaint again in 2010, as it has been for the previous decade. The FTC and other organizations recorded 1.34 million consumer complaints last year, of which 19% pertained to ID theft and 11% to debt collections. In 2009, 20% of all complaints were for ID theft, and in 2008, stolen identities accounted for 25% of all complaints. Of the remaining non-ID theft complaints, the FTC estimates that 54% were prompted by some form of fraud; in 2010, fraud was responsible for $1.7 billion in losses.

NIST Report Addresses IT Risk Management

The National Institute of Standards and Technology's "Managing Information Security Risk" special publication provides guidance for federal agencies. The report offers holistic approaches to risk management and calls for companies to think about their missions and business goals as they incorporate risk management and security. The NIST report outlines a three-tiered risk management approach that involves broad strategizing and executive government execution. The new approach is designed to help companies consider drive- and operational-oriented decision-making so they can address persistent threats and cyberattacks. NIST partnered with The Joint Task Force Transformation Initiative and other groups as part of new security guidance led by the Department of Defense.

Study: Technology Hinders Sleep

One of the reasons Americans lack sleep is because of their use of communications technology. The 2011 Sleep in America poll released by the National Sleep Foundation reveals that 43% of Americans between the

ages of 13 and 64 say that they rarely or never get good sleep on weeknights. According to the poll, Generation Z and Generation Y are more likely to engage in laptop or computer activity before bed than Generation X and Baby Boomers. Doctors report that the artificial light exposed to human eyes in low-light scenarios impedes the release of melatonin and increases alertness, making it more difficult to fall asleep. Cell phone use, including texting and talking, are also linked to a lack of a healthy amount of sleep.

COVER FOCUS

Make Outsourcing Work For You

Know Your Goals & Leverage Your Provider's Expertise

by Julie Knudson

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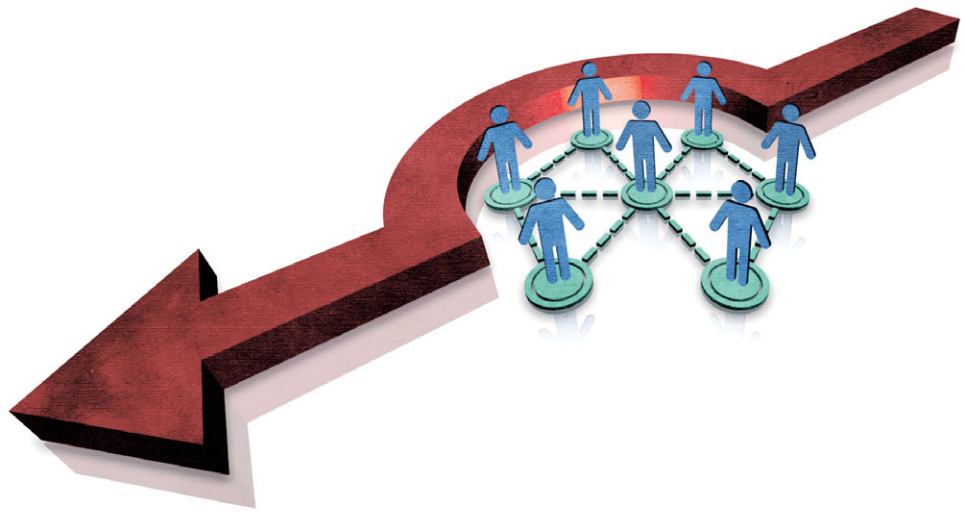


Outsourcing often makes sense operationally, but many data centers don't have the expertise to successfully locate, negotiate, and acquire large-scale services. This commonly leads to problems and an unhappy result. "The lack of experience in putting these kinds of arrangements together is probably the biggest single problem," says Tracy Currie, president of outsourcing advisory firm Capto Consulting. "You can make mistakes along the way, but if you don't have that basic skill set, your risk is pretty high of having a difficult transition and being unhappy with the outcome."

Key Points

- Understand your organization's goals before beginning your vendor search.
- Meet with potential vendors to determine what they have to offer and whether they're a good fit to meet your needs.
- Trust your provider's expertise and look to them for suggestions on increasing efficiency.

To help you navigate the outsourcing process, here is an in-depth look at several common pitfalls along with tips to avoid them.

Define Your Needs

Your vendor search will be off-target if you don't take the time up front to gather and clearly define your needs. "You need to understand what the work is and what the role is going to be," says Jeff Freeland, CEO at Astreya Partners (www.astreya.com), a contract technical staffing firm. "What kind of skill sets and experience does your provider need to bring to the table?" He advises data centers to get as granular as possible when identifying their specific needs. "It's in their best interests to be as detailed as they can and help the process if they're trying to outsource a piece of it."

If you'll be interviewing potential contractors, identify experienced internal team members to take on that task or select a qualified agency to do the high-level vetting for you. "What we've found to be successful is to have engineers interview engineers," Freeland says, adding that it isn't a service every agency or internal recruiter provides. "Very rarely do you find intense, peer-to-peer shop talk about technology."

Improve Your Selection Process

You look at the available service providers, determine a short list, tour a couple of data centers, ask for references, and then start talking about prices—sound familiar? That's how many enterprises select an outsourcing provider, but it's not the best way to find a vendor. "If your business runs on your data center and you're going to outsource it, you need to be much more rigorous in the kinds of things that you're doing when you're evaluating the various competing vendors and offerings," Currie says. "Go in with a checklist, be prepared for the meetings, and make sure that you've talked to the references before you go to the data center. Push them on what they're doing to provide innovative services and how they're going to improve your operations as an outcome of the outsourcing."

Adrian Sanders, CEO and chief value migration architect at VM Associates (www.vm-associates.com), a firm that specializes in cloud-based IT solutions, also advises using a thorough methodology when evaluating contractors. "One of the dangers of outsourcing is bringing in someone who doesn't know what your company does and doesn't understand what your vision is and what your goals are," Sanders says. "You want to align yourself with a team that obviously understands the technical implications and the technical goals but also has a strong understanding of the vision of where you're going and what you're globally, from a business perspective, trying to achieve."

Make Room For Innovation

You're short-changing yourself if you don't give your provider the ability to use their expertise to increase operational efficiencies. Currie feels one of the biggest problems is that companies outsource functions with too many restrictions attached. "We call it the outsourcing paradox," he says, "where a company tells a potential outsourcing provider, 'I run my data center a certain way, I have policies and procedures, and I want to outsource to you because you're an expert in the field. But then in the contract I'll tell you step by step exactly how I want you to perform that service for me.'"

That also holds true when outsourcing functions to contractors or staffing organizations. "If you're a team member, you need to get on board and trust [the contractor's] decisions," Sanders says. "From a contractor's perspective, nothing is more frustrating than people they depend on on the client side who are unable or unwilling to make the situation really work."

Reduce Costs Through Win-Win Relationships

When an enterprise's poorly defined needs meet its inability to relinquish total control, the result is often a much smaller economic benefit than was originally anticipated. If too many key decisions are made early and without discussion with the vendor, Currie cautions that "it can be very difficult to put together a contract in such a way that will make the deal successful for both the customer and the service provider."

The cycle that typically results from this scenario is that the outsourcing vendor feels their margins are squeezed because they don't have the leeway to innovate for better cost efficiencies, and the customer becomes unhappy because they aren't seeing the cost savings they expected. You can avoid this no-win situation by discussing service expectations and objectives with your outsourcing partner early in the process, with the goal of crafting a relationship that serves you both. P

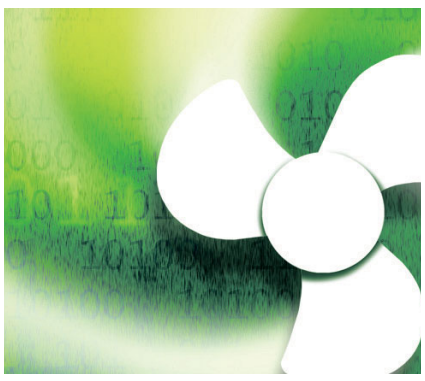
Top Tip: Focus On Outcomes Instead Of Costs

It's common to obsess about costs when evaluating solutions, but most experts agree this is short-sighted. "Price is often a metric that people look at," says Jeff Freeland, CEO of contract technical staffing firm Astreya Partners (www.astreya.com). "I think a better way is to look at the output you're trying to accomplish. What's the project you have, and what's the value to the company?" By focusing on your objectives, Freeland says you'll receive more value for your money.

Tracy Currie, president of outsourcing advisory firm Capto Consulting, agrees. "Write contracts around business outcomes as opposed to just activities," he says, but he cautions that it requires effort. "Some of that thinking is going to be a little more difficult to do on the smaller end of the enterprise scale, because [smaller companies] don't have as much leverage with the vendors to get those kinds of deals in place." Currie encourages enterprises of all sizes to pursue agreements that focus on outcomes, saying it's more cost-efficient in the long run.

PHYSICAL INFRASTRUCTURE

BUYING GUIDE



Buying Tips:

Portable Cooling

by Andrew Leibman

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For data center professionals, cooling is as vital a concern as storage capacity and security: Data centers run more efficiently and reliably with the proper temperature. And uptime is everything. Portable cooling options can often make all the difference in a temperature-strained environment because of their set-and-forget programmability, built-in automations, and modular and mobile form factors. With that in mind, there are several tips and key industry trends you need to be aware of before you purchase portable cooling equipment.

Consider your current hardware and capacity needs. To make the appropriate portable cooling purchases, decision makers need to consider their current hardware and capacity needs and provide enough scalability to grow with the organization's future data needs. Gina Dickson, product manager at Black Box Network Services (www.blackbox.com), says the primary concern for any organization is how many BTUs it needs to keep equipment at the appropriate temperature. If you go significantly over capacity, then efficiency suffers; too little capacity, and the cooling equipment won't be able to keep up.

Echoing Dickson's advice, Clark Michel, vice president of Atlas Sales & Rentals (www.atlassales.com), stresses the importance of capacity planning. "The portable should be sized to deliver adequate cooling capacity in a worst-case scenario, such as an extended heat wave or failure of the central system. In fact, it is not a bad idea to oversize portable equipment slightly to allow for these circumstances."

Open or closed loop? Another major consideration with cooling equipment is whether to select an open- or closed-loop system. Open-loop cooling systems utilize a liquid coolant such as water that is exposed to air and the environment. They tend to have a lower initial cost but also require more frequent maintenance and water treatment, and they suffer from reduced efficiency compared to closed-loop systems. A cooling system that utilizes an air- and environment-isolated liquid coolant is commonly referred to as a closed-loop system. Closed-loop systems tend to have a higher initial cost but require less maintenance and provide better cooling efficiency compared to open-loop systems.

Know where the equipment will be used. Consider where the cooling equipment will be operated. If it's a dedicated data center manned only occasionally for upgrades and maintenance purposes, then equipment noise is not a major concern. If the cooling equipment will be in an open office or near employees on a regular basis, then low noise output should be high on the list of priorities.

Look for dependable units. Atlas Sales & Rentals' Michel says dependability should be top-of-mind. "Always look for a high-quality, commercial-grade unit designed to deliver continuous, 24/7 cooling. The low-cost portables available from home improvement retailers may be adequate for residential use, but they do not have the cooling capacity or durability needed for round-the-clock protection of critical electronics."

Power and restart features. Michel also offers advice on a few must-have features. "Make sure the unit you choose has an automatic restart feature. That way, you can be certain it will start up again automatically in the event of a power blip." He goes on to warn that a backup generator may become necessary, and making sure the portable cooler can run on the backup circuitry is vital. P

Buyers' Checklist

- ☑ How many BTUs do you need to keep your equipment at the appropriate temperature?
- ☑ Do you need a closed- or open-loop system?
- ☑ Where will the cooling equipment be located?
- ☑ How much of a concern is noise output?
- ☑ Commercial-grade equipment offers superior reliability and durability.

Key Terms

BTU (British Thermal Units). Used to measure the amount of energy required to heat a liquid such as water. A single BTU represents enough energy to raise the temperature of one pound of water by one degree Fahrenheit at a constant pressure of one atmosphere. In the context of cooling equipment, BTUs are listed as a given rating per hour.

Closed loop. A cooling system that utilizes a liquid coolant that is isolated from air and the environment.

Open loop. A cooling system that utilizes a liquid coolant that is exposed to air and the environment.

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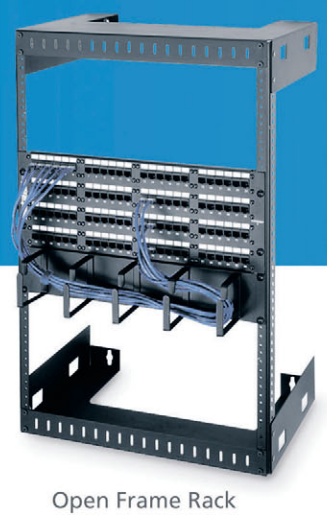
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Portable Cooling

	Black Box 24U ClimateCab NEMA 12 Server Cabinet	Black Box 42U ClimateCab NEMA 12 Server Cabinet	Black Box ClimateCab NEMA 12 Wallmount Cabinet
Product			
Description	Climate-controlled protection found in Black Box's 24U ClimateCab Server Cabinet lets you install servers without the need for additional cooling or costly infrastructure. These enclosures are NEMA 12 rated, meaning they are ideal for use in indoor locations with falling dirt; circulating dust, lint, and debris; and dripping or splashing liquids. • Save energy by cooling just the cabinet • Includes a 6,000 BTU air-conditioning unit • NEMA 12 rated for protection • Only 51 x 28 x 31.5 inches, so it can fit where space is limited **Best For:** Housing network equipment outside the protection of a climate-controlled data center. **Price:** $4,249.95 **Contact:** (877) 877-2269 I www.blackbox.com	The Black Box 42U ClimateCab NEMA 12 Server Cabinet can accommodate larger systems that reside in areas without adequate climate controls, letting users avoid making costly infrastructure changes. These enclosures are NEMA 12 rated for use in indoor locations with falling dirt; circulating dust, lint, and debris; and dripping or splashing liquids. • Save energy by cooling just the cabinet, not the entire room • Includes an 8,500 BTU air-conditioning unit • NEMA 12 rated for protection • 40-inch depth accommodates most servers **Best For:** Server installations outside the protection of a climate-controlled data center. **Price:** $5,499.90 **Contact:** (877) 877-2269 I www.blackbox.com	Secure wallmount ClimateCab cabinets from Black Box provide a compact way to protect and cool sensitive components. Users can install the NEMA 12 rated wallmount cabinets in indoor environments where falling dirt; circulating dust, lint, and debris; and dripping or splashing liquids would otherwise cause problems for equipment. • Compact wallmount design saves space • Operates on a standard 115V power source • Single- or double-hinged • Choose from a cabinet with a fan or an 800 BTU air-conditioning unit **Best For:** Remote sites that have limited space and conditions that are potentially damaging to delicate electronics. **Price:** $2,695.95 for single-hinged and $2,795.95 for double-hinged **Contact:** (877) 877-2269 I www.blackbox.com

	MovinCool Office Pro W20	MovinCool Office Pro 12 sold by Rackmount Solutions	MovinCool Office Pro 18 sold by Rackmount Solutions
Product			
Description	The latest addition to MovinCool's portable air conditioners, the Office Pro W20 has an impressive 15,700 BTU/hr cooling capacity. Because the unit is watercooled, customers need not worry about locating the Office Pro W20 in areas without local hot air exhaust: The unit simply requires a water supply and a standard 115V outlet. • Programmable digital controller enables weekend and after-hours cooling • UL listed for safe operation • Accepts a wide water supply temperature range (40 to 90 F) and a minimum water pressure of only 12 pounds per square inch • Connects to a fire alarm system to allow emergency shutdown **Best For:** Office spaces and IT equipment rooms where heat exhaust is not available. **Price:** $4,375 **Contact:** (800) 264-9573 www.movincool.com/dealer.php	The MovinCool Office Pro 12 is a portable spot-cooling air conditioner designed to lower operating temperatures of computers and networking, communications, and office equipment to maximize reliability and hardware life span. The Office Pro 12 is self-contained, portable, and features an electronic thermostat and a programmable control panel for tailored cooling when and where you need it most. • Provides 12,000 BTU/hr of cool air maximum spot cooling • Programmable digital controller • Operates on a standard 115V power source • No costly installation necessary • Maintains ideal operating temperature for heat-sensitive electronics, down to 65 degrees Fahrenheit **Best For:** Offices filled with heat-generating electronics. **Price:** $3,295 **Contact:** (866) 207-6631 I www.rackmountsolutions.net	The MovinCool Office Pro 18 offers superior cooling capacity without requiring a nonstandard power source. This portable air conditioner protects sensitive data and electronic systems from loss and failure, acting as an insurance policy for your infrastructure. The Office Pro 18 features an intuitive control panel that lets users designate when the unit operates. • Provides 16,800 BTU/hr of cool air maximum spot cooling • Operates on a standard 115V power source • Programmable controls enable weekend and after-hours cooling • No costly installation necessary • UL Listed for safe operation **Best For:** Heat-sensitive office and data systems. **Price:** $3,655 **Contact:** (866) 207-6631 I www.rackmountsolutions.net

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Andrew Leibman

KwiKool KPO 12-23 & 12-43 12-TON

The KwiKool KPO portable air conditioners deliver a powerful 12 tons (139,400 BTU/hr) of cooling capacity in a compact size. The unit measures only 62 x 32 x 64 inches—about the size of a typical 5-ton unit—and it's small enough to fit through a standard door.

- Condenser and cold supply and return air can be ducted up to 60 feet using high-static blowers
- Internal circuit breaker allows easy hookup to 208/230-volt (12-23) or 460-volt three-phase (12-43) models
- Integrated phase and power monitor provides protection from electrical power quality issues
- Low ambient temperature controls with a condenser operating range of 30 to 100 degrees Fahrenheit

Best For: Large computer rooms and emergency cooling during outages.

Price: Rentals from $450 per day or $1,325 per week

KwiKool SAC 1411

As one option in KwiKool's Strategic Air Center series of portable spot coolers, the SAC 1411 features microprocessor digital controls and an Easy-Touch control panel. The unit is an air-cooled, 1.15-ton portable spot cooler that operates on a 115V/15A circuit. The SAC 1411 also supports 460 CFM evaporator airflow and 1,200 CFM condenser airflow.

- Provides 13,850 BTU/hr of cool air at 95 degrees Fahrenheit at 60% RH
- Operates on a standard 115V power source
- Operating range between 60 and 110 degrees Fahrenheit
- Easy-access hinged panel with Kwikloks

Best For: Computer room, server closet, or warehouse use.

Price: $3,495

MovinCool CM12 & CM25

The MovinCool CM12 and CM25 are ceiling-mounted air conditioners that are just 15.5 inches (CM12) and 20 inches (CM25) tall, making them compact enough to fit above a drop ceiling for spot cooling space-limited installations and server rooms. The units free up valuable floor space and feature built-in flanges and mounting brackets. The CM25 features a wall-mounted electronic controller that lets users monitor and troubleshoot problems.

- The CM12 provides 10,500 BTU/hr of cool air at 80 degrees Fahrenheit at 50% RH and operates on a standard 115V power source
- The CM25 provides 25,000 BTU/hr of cool air at 80 F at 50% RH and operates on a 208/230V power source
- Can fit into tight ceiling spaces, freeing up floor space

Best For: Space-limited equipment rooms and cramped server and telecom closets.

Price: $2,895 (CM12), $6,995 (CM25)

Contact: (800) 264-9573
www.movincool.com/dealer.php

MovinCool Office Pro 36 sold by Rackmount Solutions

The MovinCool Office Pro 36 delivers 36,000 BTU/hr of spot cooling for sensitive equipment. The portable, self-contained air conditioner requires no costly installation and features an intuitive control panel that lets users program the unit to operate after hours or on the weekend.

- Provides 36,000 ETL-verified BTU/hr of cool air maximum spot cooling
- Operates on a 208/230V power source
- Features an AFCI plug for added safety against electrical arcing
- Supports plug-and-play condensate pump
- Easy-to-use programmable controls
- Self-contained, portable, and easy to set up and operate

Best For: Servers, routers, telecommunications, and other heat-sensitive equipment.

Price: $6,980

Contact: (866) 207-6631 | www.rackmountsolutions.net

MovinCool Office Pro 60 sold by Rackmount Solutions

The MovinCool Office Pro 60 delivers up to 60,000 BTU/hr of cooling capacity. This portable air conditioner is designed to manage temperatures for computer networks, communications equipment, and office electronics. The self-contained Office Pro 60 is easy to install—just position the wheeled unit, plug it in, and turn it on.

- Programmable digital controller enables weekend and after-hours cooling
- Operates on a 220V power source
- Provides cooling in the low 60s to maximize the life span of heat-sensitive electronics
- Condensation pump included for uninterrupted operation
- UL Listed for safe operation

Best For: Large office spaces and computer rooms filled with heat-sensitive electronics.

Price: $9,995

Contact: (866) 207-6631 | www.rackmountsolutions.net

MovinCool Office Pro 63 sold by Rackmount Solutions

Like its sibling the Office Pro 60, the MovinCool Office Pro 63 delivers up to 60,000 BTU/hr of cooling capacity and is ideally suited for the demands of large office spaces and heat-sensitive electronics installations. This portable air conditioner is self-contained and operates on 460V power for as little as 15 cents per hour.

- Programmable digital controller enables weekend and after-hours cooling
- Provides cooling in the low 60s to maximize the life span of heat-sensitive electronics
- Condensation pump included for uninterrupted operation
- UL Listed for safe operation

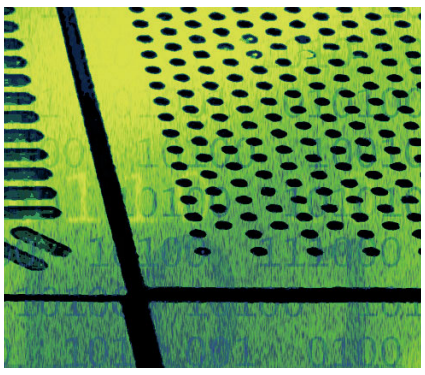
Best For: Large office spaces and computer rooms filled with heat-sensitive electronics.

Price: $12,495

Contact: (866) 207-6631 | www.rackmountsolutions.net

PHYSICAL INFRASTRUCTURE

BUYING GUIDE



Buying Tips:

Data Center Flooring & Accessories

by Nathan Lake

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One way to dramatically cut data center cooling costs is to invest in raised flooring, because it can play an active role in the way you deliver cooling and manage the heat around your servers. Here, we'll identify a few key elements you'll need to think about before you purchase data center flooring and accessories.

Space. "If your data center was built 15 to 20 years ago, it may have been built on a floor that's shallower than what's required today," says Scott Jacobitti, national sales manager for Snake Tray (www.snaketray.com). Most new raised floor construction requires a minimum of 24 to 36 inches, which is primarily to provide airflow under the floor and cool the electronics in the data center. If you don't have the space available, you may need to redesign the data center flooring to properly handle the heat from your servers.

Buyers' Checklist

- ☑ Will you need a new build-out to meet the space necessary for airflow and cable management?
- ☑ Do you currently have enough power to provide energy for all the servers, and will there be room for expansion in the future?
- ☑ Do you have cable cutouts that will prevent the data center's cool air from leaking through the areas where the cables run to the cabinet?
- ☑ Does your data center need an antistatic floor?
- ☑ Are all sections of the data center flooring capable of handling the weight and traffic to which they will be subjected?

Power requirements. In most cases, power circuits will not change over the lifetime of the data center. If you're moving or plan on moving in the near future to a denser server layout, you'll want to build in the power to handle it. "Most cabinets are currently running 10, 15, or 18dBA, and maintaining that energy means that you'll need to bring a tremendous amount of cabling under the floor," Jacobitti adds. "In conjunction with the need for airflow, you may have a situation." You'll need a tray that allows for air movement to go through the tray, rather than blocking the air and creating a hot spot.

Cables to cabinets. There are going to have to be some cut-outs in the floor for your cables, and you'll want to seal around the cable cut-outs to keep your data center cooling efficient. Otherwise, the cold air can escape through the space, which can be a big waste of energy. By installing a grommet with a filler material, you can still have the flexibility to easily access cables without reducing the data center's cooling efficiency.

Surface. "You definitely want a nonreactive surface, because you're dealing with a lot of expensive electronic equipment that's susceptible to ground faults and shorts," Jacobitti says. Flooring options are available that are static-resistant, alternatively known as antistatic, static dissipative, or static conductive. Keep in mind that the floor will need to prevent static against a variety of footwear and humidity conditions. Flooring with a traceable ground path is best suited to data centers because it can migrate the electrostatic discharge away from the electrical equipment.

Weight. Make sure that all areas of the data center raised floor are capable of handling server weight and traffic. "The data center is a dynamic space, and your organization will be moving things in and around the floor, so the entire structure needs to be sound," Jacobitti says. You'll want to be especially careful in areas where you plan to roll in equipment, not just the areas where the equipment will eventually be located. P

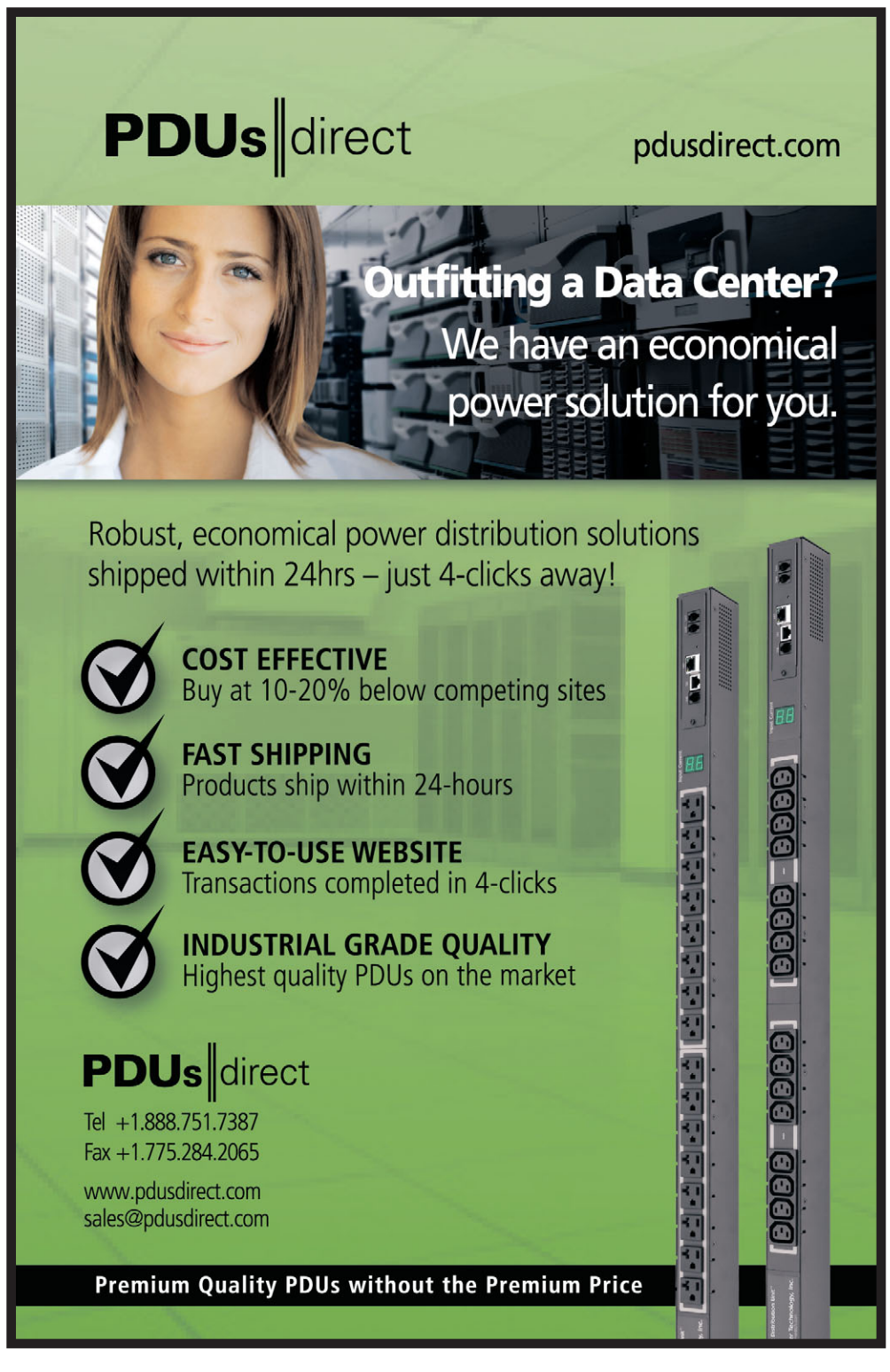
Key Terms

Base. The piece that's attached to the deck by a mastic or mechanical fastener; its height will determine how high the finished floor will be.

Head. Inserts into the base and includes holes to fasten panels or stringers, and there's usually a leveling to let you make fine adjustments to the floor height.

Panel. The material that makes up the walking surface of a raised floor. Depending on your weight and traffic needs, the panel may be made from steel, concrete with steel reinforcing bars, or aluminum. The interior may be filled with a lightweight material to give you the ability to easily move panels.

Stinger. A metal channel or square tube that's attached to the pedestal head that forms a grid and provides lateral stability. May either be snapped into place or fastened from the top with a screw.



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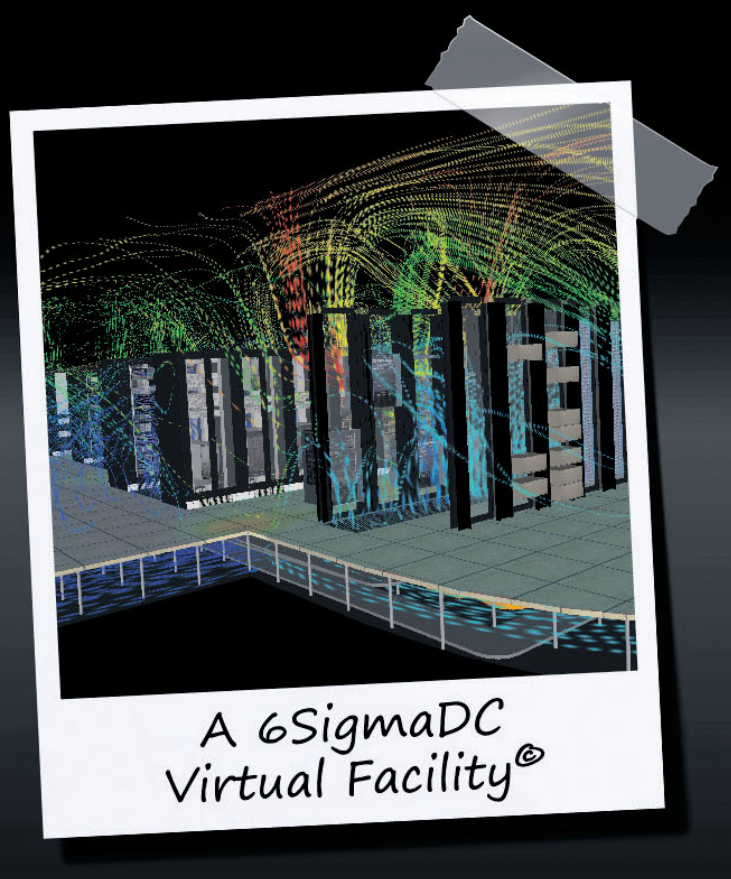

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FEATURED PRODUCT

Racktivity Puts The Power In Your Hands

The EnergySwitch 1008 Provides Deep Power Analytics

by Andrew Liebman

• • •

As a leader in in-rack power distribution and energy efficiency, Racktivity knows a thing or two about green IT. But Racktivity's new EnergySwitch 1008 PDU doesn't just equip IT personnel with the typical tools to manage power consumption, it also provides users with industry-leading metering, switching, and predictive analysis capabilities that help them maintain consistent and predictable uptime and highly detailed energy consumption visibility.

As part of Racktivity's comprehensive hardware- and software-based EnergyCloud System, the new 1U rack-mountable ES1008 reports the most complete set of real-time power metrics to help IT personnel determine the status, suitability, and quality of power being delivered to each device. The ES1008, like all EnergySwitch appliances, incorporates Racktivity's patent-pending EnergyDNA™ technology to sample and interpret more than 30,000 readings per outlet per second and distill them into usable IT metrics. Reported Power Quality metrics include Current (A), Voltage (V), Real Power (W), Consumption (kVAh and kWh), and True Power Factor, all with billing-grade accuracy of better than 99%.

Other features of the ES1008 include remote monitoring and control via any Web browser or Telnet session, support for daisy-chaining, individual outlet-level switching, 15-minute short-term or seven-day long-term logging, event-driven logging, real-time true RMS measurements, predictive harmonic analysis, inrush current protection, sequential start-up, programmable thresholds for alarms and warnings, support for flash upgrade, and ultra-low energy consumption.

The ES1008 has a built-in temperature sensor, but it also integrates with Racktivity's comprehensive line of sensors for enhanced temperature, humidity, security, motion, sound, airflow, and air pressure monitoring. A color TFT reports at-a-glance voltage, current, power factor, and configuration information.

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Racktivity

Data Center Flooring & Accessories

Product

Access Computer Floors

Description

Access Computer Floors has more than 28 years of experience working with raised flooring for high-profile clients such as General Electric, the United States Postal Service, and Morgan Stanley. The company's raised floor system process, including bidding, estimates, purchasing, and installation, is efficient and cost-effective. In addition, the raised floor can be adapted for future modifications.

- Available in wood core, steel, concrete, aluminum, and panels
- Variety of panel options and pedestal systems
- Laminate finish available in 1/16-inch and 1/8-inch thickness
- Can repair flooring and perform routine flooring maintenance
- Used raised flooring available as an affordable alternative

Best For: Enterprises that want the job done on schedule and within budget.

Access Floor Systems

AccessFloorSystems.com offers everything you'll need for a data center floor, including raised floor panels and components, equipment supports, cable trays, trim materials, grommets, ESD carpet and floor, panel lifters, and anti-static mats. AccessFloorSystems.com has been around for more than 25 years, and it offers same-day shipping on most raised floors, components, and accessories.

- Raised floor systems are available for new and used Tate Bare Concore, Woodcore Panels, Tate All Steel Panels, Tate Concrete Panels, and Tate Aluminum Panels
- Replacement panels and components for new and legacy data centers
- Energy-saving solutions for raised floor penetrations and blanking panels
- High-velocity perforated floor tiles and grates to assist with cooling issues

Best For: Enterprises that are building or remodeling the data center floor and want a company that offers a large selection of products and solutions for legacy data centers.

ASM Modular Systems Raised Access Flooring System

Raised access flooring systems from ASM allow for easy reconfiguration via instant access to wiring and cabling. ASM's raised access floors include technology to address advances in electronic workflow and energy efficiency.

- Incorporates a solid brass positive grounding device in every panel
- Uses nickel chrome plating on critical parts for safety
- Uses a solid tube design that's better than conventional U-shape for high-strength stringers
- Green building elements
- High-pressure laminates available
- Vinyl plastic that's resistant to strong chemicals

Best For: IT administrators who require electrical grounding and want no zinc whiskers and high-strength stringers.

Product

PDU Cables Air-Guard Cable Seal

Description

Seal raised floor cable openings with the Air-Guard Cable Seal product line and realize an immediate cost savings in the data center. These products significantly minimize air loss and improve static pressure to cool data center equipment, which helps prevent expensive electrical equipment from overheating. Air-Guard is the only brushed floor grommet line to offer a dual-stage sealing system with the most effective seal in the data center, and the only to provide a safety cover for increased safety and durability when cables are not going through the raised floor cut-out. For the highest-quality products in the data center marketplace and the most ease in sourcing your sealing solution, rely on PDU Cables.

- Dual-sealing system provides an effective, economical means to eliminate bypass air though cable cut-outs
- Choose from products with overlapping brushes and/or gasket material to seal your specific cut-out need
- Flexible and simple cable routing via removal of floor tiles without disconnecting equipment

Best For: The most effective cable opening seal in a raised floor data center environment.

Contact: (866) 631-4238 | www.pducables.com

Sealco Tacky Mats

Sealco provides a variety of tacky mats to keep your computer or clean room free of contaminants. Each mat is composed of multiple-layer polyethylene film with a specially treated pressure-sensitive adhesive on one side, which catches the contaminants from shoes or equipment. When sheets gather contaminants, the top sheet can be peeled off to expose a new sheet. The sheets are designed to resist adhesive transfer, preventing sheet-to-sheet de-lamination. Ask about our free removable mat holders that allow easy placement and removal.

- Variety of sizes and colors
- Keeps contaminants away from computer equipment
- Optional company logo imprint
- Mat sheets individually removable and numbered
- Non-beveled edges ensure each sheet is contaminant-free

Best For: Entry ways into computer rooms or any area where dust/dirt can track into the computer room.

Sealeze CoolBalance

Data Centers are under pressure to be more efficient in their cool air usage. Newer equipment is more compact and generates more heat than previous generations. The CoolBalance brush seal with XtraSeal™ technology utilizes a thin EPDM membrane that seals the V-gap produced when cables penetrate brush filament. The family of products includes in-floor and surface mounting as well as a circular seal. The CB33 circle seal completely encapsulates the cables, due to the geometry, to offer a very effective sealing solution. CoolBalance comes in a variety of sizes, from 5 x 5 inches to 10 x 24 inches, with circular seals in nominal 4- and 6-inch sizes and other customized solutions to seal around PDUs or inside your cabinets.

- Seals include in-floor design for new and existing facilities, surface-mount for odd-shaped or irregular openings, circle seals for small openings, and wall seals for through-the-wall cable passages
- Sealeze can custom-build sizes at off-the shelf prices
- Independent testing has verified the effectiveness of CoolBalance in actual installation conditions
- Backed by 30 years of experience in the industry

Best For: New or existing facilities looking for brush products to accommodate a variety of cable cut-out needs.

Contact: (800) 787-7325 | www.coolbalance.biz

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Nathan Lake

Bergvik Flooring Modular Raised Floor

In the flooring business since 1970, Bergvik offers the strongest, most stable and modular raised floor available for data centers. Bergvik's engineering department supplies CAD drawings that are suited to your needs.

- The Iso Floor system offers custom panels as an option to fit your equipment depths and allows for optimization to build smaller and smarter rooms; floor heights from 12 to 94 inches
- River Cooling Airflow Panels with high-plume fins provide superior air stratification to cool upper servers when compared to flat bottom panels; the unique 36- x 24-foot panel also allows for more server racks
- Earthquake bracing frames will fit any raised floor and are tested to NEBS standards

Best For: Enterprises that are looking to lower energy costs by up to 40% and add more server racks in the same footprint, increasing their revenue stream.

Julie Industries StaticSmart Flooring

For more than 30 years, Julie Industries has been providing static control flooring solutions to companies and government facilities throughout the world. The StaticSmart line of floor finishes includes ESD carpet tile and positile, ESD vinyl, and ESD rubber tile. All StaticSmart flooring is appropriate for data centers and access floors. StaticSmart offers a lifetime warranty on static protection properties.

- Easy to install
- Wide selection of styles and colors
- Low maintenance requirements
- Permanent static protection without specialized footwear
- Lifetime static protection warranty

Best For: Data centers and networked environments needing fail-safe static control flooring for either access floor or non-access floor applications.

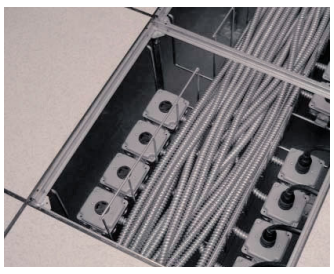
Mainline Computer Access Panel Lifting Tool

The vacuum created by the double cups on the Access Panel Lifting Tool from Mainline Computer allows easy lifting of heavy weights: Simply place the Access Panel Lifter Tool onto the material and press down to force out the air underneath the vacuum cups, which creates a powerful vacuum hold. The suction is broken when the fingertip-operated bar is lifted. Mainline Computer recommends one lifter for every 500 square feet.

- Heavy cast aluminum handle
- Spring-activated
- Oil-resistant black nitrile rubber vacuum

Best For: Removal of raised floor access panels.

Snake Tray Power Snake Canyon



The patented Power Snake Canyon includes an underfloor cable tray that includes an integrated power module to create an all-in-one system providing both cable paths and up to eight preinstalled power receptacles. In addition to reducing construction costs, the modular cable tray installs almost instantly via a 30-second attachment system to any access floor, with no tools or hardware needed. The cable trays are reusable and won't void a manufacturer's warranty.

- All-in-one cable management and power module design
- Movable and reusable
- 30-second attachment installation to any access floor type

Best For: Installations under access flooring.

Contact: (800) 308-6788 | www.snaketray.com

Staticworx Electrically Conductive ESD Rubber

Staticworx produces antistatic floors that are ideal for data centers and mission-critical operations. All Staticworx flooring comes with a lifetime static-control warranty, and Staticworx EC ESD Rubber is unaffected by footwear choice, traffic, or environment.

- Awarded Seal of Approval by ESD Journal as only fault-tolerant flooring
- No wax or polish necessary—damp mop only
- Installed easily over raised access or concrete floors
- Can cover entire floor or be purchased as floor mats

Best For: Data centers that want to ensure flooring prevents static regardless of footwear worn in the workplace.

Upsite Technologies KoldLok Surface Mount Grommets

Improper sealing of cable openings in data centers allows valuable cold air to escape and contributes to ineffective cooling of equipment. The KoldLok Surface Mount Grommet increases current cooling unit capacity, mitigates equipment heat loads, and raises static pressure under the raised floor to improve cool air delivery through perforated tiles or floor grates. KoldLok Surface Mount Grommets snap together to seal cable openings in existing computer rooms with raised floors to optimize existing cooling equipment and manage heat loads. They are designed to seal a variety of existing raised floor tile cutouts and allow flexibility of removing tiles without capturing cables.

- Multiple layers of different-length, opposing-brush filaments eliminate up to 98% of bypass airflow
- Flexibility means admins can re-cable or move tiles with ease
- Will not become dislodged and requires no additional maintenance
- Easy tool-less installation, requires no downtime to install or re-cable

Best For: Sealing cable openings in existing data centers.

Contact: (888) 982-7800 | www.upsite.com

FEATURE PACKAGE

Companies To Watch

We profile five companies we think are worthy of your enterprise's attention.

Physical Infrastructure Aficionados | 22

■ When times and markets change, the companies that survive are the ones that respond with new ideas. Panduit, a manufacturer of physical infrastructure products based in Tinley Park, Ill., has done so, and that's why it has been around since 1955.

Revolutionizing WAN | 23

■ Talari Networks believes that its adaptive private networking approach to enterprise WAN virtualization has the power to dramatically change the way those networks operate.

One-Stop Shop For SMBs | 24

■ Data Center Depot specializes in providing cabinets, racks, cables, KVM switches, and other specialized furniture for data centers worldwide.

Onsite Data Destruction | 25

■ As a pioneer in the turnkey data elimination market segment, Secure MDE understands the administrative and regulatory compliance challenges facing today's corporate landscape.

Environmental Overseers | 26

■ Sensaphone, which designs and manufactures remote monitoring systems for a variety of personal and business applications, has stepped up its place in the IT and data center market to become a primary player in that space.

Physical Infrastructure Aficionados

Panduit Provides Products That Are Economical & Easy To Deploy

by Holly Dolezalek

• • •

When times and markets change, the companies that survive are the ones that respond with new ideas. Panduit, a manufacturer of physical infrastructure products based in Tinley Park, Ill., has done so, and that's why it has been around since 1955.

Panduit (www.panduit.com) started out in the electrical manufacturing industry, and the company still makes physical infrastructure for electrical delivery. But in the past 20 years, as companies' needs for different kinds of physical infrastructure have changed, Panduit has expanded its offerings, as well. Now, in addition to its electrical group, the company also has a network components group. Within that group, there are three divisions: industrial automation, data centers, and connected buildings. Panduit sells the equipment companies need to run their buildings. For data centers, that includes integrated cabinets, cabling, pathways, patch panels, and other types of necessary products.

Most of the company's employees are in the United States, but Panduit's presence is global, with sales offices, manufacturing facilities, and warehouses in 112 countries.

"The idea behind our global supply chain is that we're providing customers with good real-time information," says Todd LaCognata, global solutions manager for Panduit's data center division. "We want to be agile, understand the needs and requirements of our customers, and respond to them quickly, and we can't do that with manufacturing centralized in the U.S."

More Than Manufacturers

Panduit doesn't want to be just a manufacturing company, though. Its focus is on finding ways to help customers solve the problems they're concerned with, not just to make the products that will help them do it. Many of Panduit's customers are small to midsized companies, and they have similar concerns to larger enterprises about the functioning of their data centers: hot spots, cable management, bandwidth management, and other issues with power, cooling, speed, space, and performance.

LaCognata explains that the company has partnerships with other manufacturers, such as Cisco, IBM, and EMC. By partnering with other companies, Panduit knows what's going on from the customer's standpoint and can help figure out a solution. "For example, maybe a customer is having a problem switching out line cards because there are so many cables attached to them," he says. "The problem isn't with the switch, it's the amount of cable that goes to the switch, and we find out about that kind of problem from Cisco."

That kind of expertise, in figuring out how to make physical infrastructure work better and to map it from physical infrastructure to logical architecture, is what LaCognata sees as Panduit's main strength. "A customer might be deploying a Cisco switch with end-of-road or top-of-rack topology, and our ability to map for optimized solutions in that situation is our differentiation and value," he says.

New Directions

Panduit has a new product roadmap that it is hoping to expand on over the next five years. Nobody can say the company isn't aggressive in this area: LaCognata notes that the company routinely spends 8 to 10% of its revenue on research and development, and that's both in good years and bad. "A lot of our profits come from products that we've developed within the last five years, so we're not just coasting on products we developed in the '50s," he says.

> "A lot of our profits come from products that we've developed within the last five years, so we're not just coasting on products we developed in the '50s."
>
> *- Panduit's Todd LaCognata*

One new product that Panduit will be releasing later this year is a containment solution for data centers. It's a modular solution intended for uses in cold aisle containment for data centers that are deploying high-density pods in otherwise low- or medium-density environments. "The concept of cooling is paramount with these high-density pods, and so is containment," LaCognata says.

Company Name: Panduit
Location: Tinley Park, Ill.
URL: www.panduit.com
Date Company Founded: 1955
Interesting Fact: Panduit's name comes from its first product, a panel conduit, which the company still sells today.

Another is a pathway solution. Rather than following either the ladder rack or wire basket model, the pathway is a hybrid of both models. Panduit wanted to take advantage of the benefits of both, LaCognata says, while creating a pathway that installed faster than either.

In cabling, Panduit will release a new Category 6a cable with the diameter of Category 6. But more importantly, the company has just launched its Signature Core Cabling system, a fiber solution that LaCognata says will be able to achieve 40Gb or even 100Gb speeds at longer distances than traditional fiber options.

What's Happening

The roadmap reflects what LaCognata has been seeing in the marketplace, including trends in containment because of the way customers are organizing their data centers. "We're seeing a lot of increased utilization and a lot of consolidation, whether from a data center or cabinet or server perspective," he says. "In the past, a lot of customers used 40% of a cabinet and the rest was free because they built for growth. There were a lot of servers where less than 10% was being utilized because they only had one or two applications on them. But virtualization has changed the game, and as companies' applications are being virtualized and blade servers are condensing the amount of space, it means increased power and cooling, and solutions like containment make a lot of sense."

Since 2009, when LaCognata says that it seemed like everyone stopped buying anything for a while, customers have begun spending money again. But they've also brought a new caution to their spending decisions, and that has meant more of a focus on total cost of ownership, he says. "They're interested in making things simpler and easier to manage," he explains.

In that sense, some of Panduit's solutions are meshing nicely with interest in infrastructure that can be deployed more quickly and easily. "Being able to deploy faster is at the forefront of the provisioning process that IT people struggle with daily, and that's why we've focused on preterminated solutions that allow customers to deploy cabling infrastructure and cabinets faster than in the past," he says. P

FEATURE PACKAGE

Revolutionizing WAN

Talari Networks Helps Enterprises Lower WAN Costs & Improve Network Performance

by Cynthia Harvey

• • •

If you visit the Talari Networks Web site, read the company blog, or talk with executives, you'll likely hear the words "revolution" or "revolutionary" a lot. That's because the company believes that its adaptive private networking approach to enterprise WAN virtualization has the power to dramatically change the way those networks operate.

"Talari's approach to WAN virtualization has been compared to the early days of WAN optimization, more than 10 years ago," says Andy Gottlieb, CEO of Talari Networks (www.talari.com). "Many of Talari's early customers have deployed WAN optimization solutions, seen tremendous benefit, and ingrained this technology into their networks. Now they are looking for the next big thing to reduce costs and enhance performance."

Gottlieb and John Dickey, Talari's vice president of engineering, founded the company in 2006, after they came up with their idea for the "next big thing" in WAN technology. Dickey built the first prototypes for the company's APN (adaptive private networking) appliances on a shoestring budget. Since then, Talari has raised $16 million from two rounds of venture capital funding and has grown to 35 employees with headquarters in San Jose, Calif., and a development office outside Raleigh, N.C.

Talari's primary product is its line of Mercury APN appliances. It includes data center-ready products such as the Mercury T3000 APN Appliance, as well as smaller appliances designed for remote offices or even home offices. According to the company, these appliances can reduce the amount that enterprises spend monthly on WAN services by 40 to 90% while providing better reliability than their existing solutions.

How It Works

Adaptive private networking is a form of WAN virtualization, which the company sees as a part of the larger current trend toward virtualization that's sweeping the industry. If you're familiar with how RAID storage technology works, it will be fairly easy to understand adaptive private networking because it uses some of the same principles. In a RAID array, the system distributes data across multiple physical disk drives, which the operating system sees as a single disk. Similarly, APN technology distributes WAN traffic across networks, including public broadband connections, that are integrated to provide a unified connection.

"WAN virtualization does for the enterprise WAN what RAID did for storage," Gottlieb says, "delivering a network with 30 to 100 times the bandwidth per dollar, monthly WAN spend reduced by 40 to 90%, and greater reliability and application performance predictability than the best single-provider MPLS WAN."

In order to achieve the level of reliability and performance necessary for enterprise applications, Talari appliances constantly monitor all available networks. They respond in less than a second (in about 250 milliseconds for domestic connections or 500 to 600 milliseconds for international connections) to problems such as packet loss or high latency. The appliances can then reroute traffic through a different network in real time so that the application in use suffers no impact. As a result, an APN appliance can "ensure four-nines (99.99%) reliability and performance predictability across all applications," Gottlieb says.

Lower Costs

Many companies with a WAN in place currently use private frame relay or MPLS (Multiprotocol Label Switching) services. These services do provide better performance and reliability than public broadband connections, but they can cost $375 to $2,500 per megabit per second per month for T1/E1-based connections.

With an APN appliance in place, enterprises can utilize public broadband connections for some or all of their WAN needs, reducing or eliminating their reliance on MPLS. Because broadband Internet service providers typically cost just $4 to $15 per megabit per second, enterprises using one of these appliances can reduce WAN expenses while significantly increasing bandwidth.

According to Gottlieb, the companies likely to see the greatest cost benefit from Talari appliances are those with 10 to 100 locations. He adds, "Our solution is particularly beneficial for companies with international locations or that use real-time applications (VoIP, videoconferencing, etc.)."

A Complement To WAN Optimization

Many companies begin their efforts to lower WAN costs with WAN optimization projects. "We have also found that many enterprises that have already deployed a WAN optimization solution (typically 18+ months previously) are also interested in our product," Gottlieb says. "About two-thirds of our customers have deployed WAN optimization."

WAN optimization solutions help enterprises make the best use of a costly resource—bandwidth—by employing such techniques as deduplication, compression, caching, and traffic shaping to reduce the amount of data that must be transmitted by the WAN.

APN takes a different, but complementary, approach to reducing costs. It provides a way to utilize public connections that are easily accessible and much less costly. By spreading traffic across multiple networks, it is able to achieve the type of reliability that enterprises need, despite using public networks. "The APN technology that we developed for WAN virtualization continuously measures one-way network performance and can switch traffic away from problem connections [in a] sub-second, allowing enterprises to augment or replace expensive MPLS networks with inexpensive public Internet connections," Gottlieb explains.

When both WAN optimization and WAN virtualization are used, the APN appliance generally sits between the corporate firewall and the WAN optimization device. Together, the two technologies can help enterprises reduce their WAN costs even further than when one is used alone.

Ideal For Cloud Computing Environments

Many of the current trends in the tech industry make APN technology even more attractive for enterprises. "We are on the cusp of a significant change in network architecture that only happens every decade or so," Gottlieb says. "It is being driven by a variety of factors, including server virtualization, data center consolidation, cloud computing, and intranet-focused use of colocation facilities."

All of these trends "rely on secure, reliable, predictable-performance WAN connectivity that our WAN virtualization technology enables," Gottlieb says. For that reason, the company believes that demand for its products will likely grow significantly in the coming years. P

TALARI NETWORKS

PROCESSOR COMPANY TO WATCH

Company Name: Talari Networks
Location: San Jose, Calif.
URL: www.talari.com
Date Company Founded: 2006
Interesting Fact: The name "Talari" comes from "talaria," which is the name for the winged sandals of the Roman messenger god Mercury.

> "WAN virtualization does for the enterprise WAN what RAID did for storage."
>
> *- Talari Networks' Andy Gottlieb*

News

More Connectivity Options Bring Increase In Online Retail Sales

The increased availability of options for Internet connectivity will help drive online retail sales in the coming years, according to a Forrester Research report. In 2010, U.S. online retail sales rose 12.6% (up to $176.2 billion), and Forrester expects that revenues will grow at a compound annual rate of 10% through 2015. There were 5.5 million new online shoppers in 2010, which includes those who, until recently, were not comfortable making e-purchases. The report also found that many people are buying products that were once limited to physical stores, such as furniture and home appliances. Overall, 8% of U.S. retail sales were made online in 2010.

Report: iPad 2 Sales To Surpass 5 Million In Early Months

Piper Jaffray analyst Gene Munster forecasts that lines of customers waiting to buy the new iPad 2 device will be shorter than with the original iPad but result in greater sales because of the larger number of stores the iPad 2 will be for sale in. The iPad launched in 221 U.S. Apple stores and about 1,100 Best Buy stores, Munster notes, compared to the iPad 2's expected launch in more than 10,000 retail outlets. Overall, Munster predicts Apple will put 5.5 million iPad 2 units in customers' hands in the first three months of availability compared to the original iPad's 3.27 million units.

Western Digital Acquires Hitachi Storage Division

Hitachi Global Storage Technologies is set to be acquired by Western Digital in a deal worth $4.3 billion. The resulting storage company will have at its disposal considerable worldwide talent plus an extensive technology portfolio. As part of the deal, Hitachi will own 10% of Western Digital's shares outstanding. The new company will keep the name Western Digital and will remain headquartered in Irvine, Calif. John Coyne will stay on as CEO, with Steve Milligan, Hitachi GST president and CEO, becoming president. Referring to the union, Coyne says he sees it as "a unique opportunity for WD to create further value for our customers, stockholders, employees, suppliers, and the communities in which we operate."

Worldwide Server Sales Show Q4 Increase

Worldwide server sales grew 15.3% to $15 billion in the fourth quarter of last year, according to IDC. This marked the fourth quarter in a row that the market saw year-over-year increases in sales. For all of 2010, worldwide server revenue was up 11.4%, and shipments were up 15.3%. IBM stayed at No. 1, with a total market share of 37.4%, largely because of the company's System z servers. HP came in second with a 29.9% market share, followed by Dell with a 12.6% market share, Oracle with 5.9%, and Fujitsu with 3.6%.

News

VMware Buys WaveMaker

VMware has acquired WaveMaker, which makes open-source software that lets non-developers create Java Web applications. The companies did not disclose the terms of the deal. WaveMaker, which runs on Windows, Mac, and Linux-based operating systems, uses a graphical drag-and-drop interface to let users who aren't programming experts develop their own Web apps and then deploy them in the cloud. The software is based on a programming model created by SpringSource, which VMware acquired about 18 months ago. VMware says it will sell training and consulting services for WaveMaker, which it will offer under an open-source license.

Cybercriminals Target PoS Devices

Cybercriminals are increasingly targeting small businesses through point of sale devices, according to a report from security company Trustwave. PoS devices, which read the account information of a card, are increasingly becoming the weak link that leads to more credit card breaches. The report states that malware is now alarmingly sophisticated and requires PoS-specific knowledge to deploy. Trustwave found that the security in place to protect such devices is not always as secure as it should be—88% of breaches result from insecure software or careless management by a third-party vendor. Results confirmed that the food and beverage industry was the most breached industry in 2010.

HP Execs Broke Rules, Report Says

A report in *The Wall Street Journal* says that HP's CEO and three members of the company's board of directors broke company rules when they participated in the nomination of new board members. The newspaper cites stock investor advisory firm Institutional Shareholder Services' report, which says that CEO Leo Apotheker and the three directors violated HP's own rules relating to nomination and independence of board members by participating in the nominations of five new people to the company's board of directors. The advisory firm recommended that HP shareholders vote against the three directors and also reject Apotheker's proposed $47 million pay package.

Corporate Data Breach Costs Climb

The estimated cost of the typical corporate data breach jumped to $7.2 million in 2010, compared to 2009's $6.8 million average. The 5% increase is reflected in an average per-record cost of $214. The Ponemon Institute's annual study of data loss costs noted that negligence remains the leading cause of data breaches (41%). However, for the first time, malicious attacks (31%) overtook system failure as the second leading cause. The report also shows that malicious or criminal attacks are usually the most expensive type of breach, costing an average of $318 per customer record.

Gartner Lowers PC Shipment Forecasts

Gartner's latest forecast estimates a 10.5% increase in global PC shipments this year, to 387.8 million units. For 2012, Gartner foresees a 13.6% increase to 440.6 million units. Although the new numbers represent healthy growth, they are down from Gartner's previous estimates of 15.9% growth in 2011 and 14.8% growth in 2012. Gartner blames the slower growth on the limited mobility of notebooks and the maturing tablet market, where people have either already purchased one or they are waiting to see if a tablet can replace older notebooks.

FEATURE PACKAGE

One-Stop Shop For SMBs

Data Center Depot Gives Smaller Companies Access To Quality Infrastructure Equipment

by Robyn Weisman

• • •

New Jersey-based company Data Center Depot says on its Web site (www.datacenterdepot.com) that it offers "Everything for the data center, except the data." The company specializes in providing cabinets, racks, cables, KVM switches, and other specialized furniture for data centers worldwide.

Data Center Depot's parent company, Gaw Associates, was founded in 1990 to represent small businesses in the high-tech industry that couldn't afford to hire a full-time salesperson, explains Kathy Betz, founder and president of both Gaw Associates and Data Center Depot. A few years later, Betz's son, Chuck Gaw, went into business with Betz, and in 1996 Data Center Depot came into being. "We [took] the name Data Center Depot because we found that a lot of IT companies needed data room equipment, such as special cabinets and KVM switches," Betz says.

Data Center Depot has shown over the years that it can provide the same level of quality and service as its bigger competitors. The company is both TL9000- and ISO9001-certified and has been a BBB (Better Business Bureau)-accredited company since 2009 with an A+ rating. In addition, it is a nationally certified woman-owned business under WBENC (Women's Business Enterprise National Council).

Anything That Has To Do With Sheet Metal

Not only does Data Center Depot claim to offer the highest quality products for the lowest possible prices, everything it sells is made in the United States at a plant not far from its headquarters. "We manufacture anything that has to do with sheet metal, especially with cabinets," Betz says.

Most of Data Center Depot's cabinets are designed to handle high-density equipment, such as blade servers, along with the corresponding higher power requirements. The company offers both ready-made and custom racks and other furniture, depending on a customer's needs. "The customer may take our standard unit and make modifications so that it's their spec," Betz says. "We can make special harness assemblies and hang them inside the cabinet. We can handle it from soup to nuts within the cabinet."

Cabinets For Every Data Center

Data Center Depot offers a range of server cabinets to handle specific data center needs. One of the company's most popular products is its Seismic Equipment Cabinet, which protects equipment situated in earthquake-prone areas. Its 44U model can easily handle a large volume of cables and patch cords, and all models come with integrated top panels with cable pass-through, special options such as a bend limiter with access hinge, and a cable tie-down bar to make cable management less onerous. According to Betz, the Seismic Equipment Cabinet is manufactured under stringent testing through MET Laboratories, which certifies these cabinets at NEBS Level 4.

Another popular seller is Data Center Depot's CableMax line of cabinets. CableMax's cabling and heat management capabilities anticipate issues of denser servers by incorporating an abundance of cable pass-through holes for cross-cabling and mesh enclosures to promote airflow throughout the equipment as part of the cabinet design. It also comes with an optional split rail system that allows two different rail depths, doors with either 63% or 80% mesh for improved heat dissipation, and Dirak locks and handles on the doors and side panels.

Betz says the CableMax series is especially popular in data centers that have to deal with a lot of cable entry. "What we're seeing now is that cooling issues in IT rooms have to be addressed, whether within a cabinet or the room itself, and that's where the future is going," Betz says.

Strength In LAN

Data Center Depot offers two separate lines of LAN stations, each with names befitting their levels of strength. Its Samson LAN Station sports a heavy-duty cantilever frame, has shelves that can hold up to 450 pounds of equipment and can be adjusted in 1-inch increments, and features two horizontal back panels. The company's Hercules LAN Station has an industrial-strength four-post frame, has shelves that can hold up to 800 pounds of hardware and can likewise be adjusted in 1-inch increments, and features three horizontal back panels.

Both the Samson and Hercules LAN stations have legs made of 14-gauge tube steel and come with lifetime guarantees. In addition, Data Center Depot offers potential buyers free consultations to determine which one is best for their needs.

Customer Service Is Key

Data Center Depot's slogan is "Give us 1% of your business, and we'll earn the rest." Betz explains that Data Center Depot succeeds in this because of its focus on gaining the respect and trust of its customers. No matter how specific your data center furniture needs may be, Data Center Depot will meet them, whether you find it in its ready-made equipment or anything custom-made.

"We pride ourselves on customer service," Betz explains. "Whether we have an order for $10 or $10,000, it gets the same attention from our company, and we stand behind the quality of products and services to ensure our customers are completely satisfied with their purchases." She adds that every new employee of the company understands this concept to the fullest before interacting with customers.

Cognizant of the budget constraints today's data centers face, Data Center Depot is also offering recession pricing on several of its computer tables and other equipment. P

GAW ASSOCIATES, INC.

PROCESSOR COMPANY TO WATCH

Company Name: Data Center Depot (a Gaw Associates company)
Location: Mount Laurel, N.J.
URL: www.datacenterdepot.com
Date Company Founded: 1996
Interesting Fact: Gaw Associates/Data Center Depot was formed when Kathy Betz, president of both companies, learned that the company she was working for was relocating to Tampa, Fla. She elected not to go for personal reasons, choosing instead to form her own company.

> "What we're seeing now is that cooling issues in IT rooms have to be addressed, whether within a cabinet or the room itself, and that's where the future is going."
>
> *- Data Center Depot's Kathy Betz*

FEATURE PACKAGE

Onsite Data Destruction

Secure MDE Eliminates Worries Often Associated With Storage Disposal

by Joseph Pasquini

• • •

In today's technology-driven workplace, companies of all sizes are engaged in a continuous struggle to minimize the risks associated with unsecured, mishandled, or unwanted customer data.

Firms that maintain any kind of customer data must never underestimate how damaging it could be to their corporate reputation, not to mention their financial bottom line, to let such sensitive information fall into the wrong hands. Systems administrators and executive management alike intrinsically understand the need to safeguard such data within the enterprise network infrastructure and will often do whatever it takes to guarantee its security. The risks of unsecured data are just too great.

However, the need to protect the data even after its corporate value has been exhausted cannot be overlooked. The harsh reality is that hard drives fail, media formats come and go, and storage capacity requirements escalate. In addition, companies are constantly faced with new and evolving regulatory and environmental compliance issues as governmental regulations concerning the handling and disposal of data continue to tighten. As a result, the protection of sensitive data throughout its entire life cycle—up to and including data elimination—must always be considered. This is where Secure MDE comes in.

Company With A Mission

As a pioneer in the turnkey data elimination market segment, Secure MDE (Mobile Data Elimination; www.securemde.com) understands the administrative and regulatory compliance challenges facing today's corporate landscape. Founded in 2006, Denver-based Secure MDE has quickly established a name for itself with its mobile shredding and recycling service, which primarily targets corporate data destruction projects anywhere across the country.

"Secure MDE can handle any job anywhere in the continental United States," says Steven Fuelberth, President at Secure MDE.

Secure MDE is a subsidiary of Luminous Recycling, a market leader in computer and general electronics recycling services. Luminous is responsible for annually recycling more than 10 million pounds of electronic scrap—a respectable statistic by any measure.

Onsite Destruction vs. Traditional Methods

Fuelberth says that end-of-life storage media and devices are often overlooked as security risks by IT professionals. "Once data storage media is replaced, the new device is an asset, but the old device becomes a huge liability," Fuelberth says. "Any solution currently used will leave uncertainty and is very costly in terms of man hours, data center space, and equipment needs." In contrast, Fuelberth says, "Secure MDE provides a low-cost onsite destruction option and eliminates any uncertainty with regards to future access to data."

Chris Pier, Secure MDE's sales director, is passionate about the importance of onsite data destruction and its value over traditional methods. "Would you physically carry several million dollars in cash to a bank, just to ensure that it got deposited? Of course you would. What if the bank offered to come to your office with their employees and deposit the funds directly into your account before they left your office, ending your risk and liability with that cash at your front door? How valuable would that partner be to you?" Pier asks.

"That is exactly why Secure MDE was created," he continues. "Every hard drive, data tape, flash drive, etc., holds data that does not belong in the hands of any unauthorized party. That data is a constant liability and security threat, whether it is in your current network, been replaced/copied to newer data storage systems, in a 'secure' storage area, [or] in transit between locations. . . . Millions of dollars in liability cannot have anything less than a totally secure solution."

Tim Young, operations manager at Secure MDE, echoes Pier's comments. "It seems like every day, there is an article about a company that misplaced a flash drive or some other storage device," Young says. "With how many records can be stored on a single hard drive, our mobile destruction service is the best insurance policy you can buy. Shredding is the only way to guarantee that the data is destroyed."

This Shredder's Got Bite

The centerpiece of Secure MDE's data destruction service is its unique Secure Shark mobile data elimination station, which is specifically designed for the onsite destruction of hard drives and other media containing sensitive information.

According to Fuelberth, Secure MDE's capability to operate around the clock allows it to specialize in large onsite projects comprising 50,000 or more tapes or 1,000 or more hard drives. "We will work multiple shifts, which allows us to process 24 hours a day," says Fuelberth. "We handle all aspects of the project, including logistics; our people take care of everything."

Pier adds, "The mobility aspect of our Secure MDE service is the key to removing risk. The fact that the shredder comes to the customer's site is truly innovative."

Mounted on a 28-foot tractor trailer, Secure Shark's twin-shaft, shear-type shredder can shred up to 500 hard drives into 1-inch shards per hour. "The devices are reduced to a physical state where data cannot be recovered," Fuelberth says. The Secure Shark's processing units provide their own power and do not require connection to local utilities.

The entire shredding process is recorded on digital video and logged for customer review. Real-time video is also available for clients who wish to witness the destruction process from the comfort of their offices, thereby eliminating any uncertainty regarding the overall process.

"Our professional, background-checked, and insured technicians will arrive and handle the entire process," Fuelberth says. "When completed, they will provide the client video of the entire process, as well as a certificate of destruction." The shredded materials are then sent off for recycling.

The Outlook Ahead

Pier contends that the constant state of evolution within the IT arena necessitates diligence. "New technologies and naturally increasing amounts of data are constantly demanding more consolidated and efficient ways to utilize, transfer, and store data. The result is mountains of IT/data center equipment becoming obsolete every day. With all of those systems comes a new set of risks, liabilities, and challenges," Pier says.

"Secure MDE is a service that has expertise in dealing with the obsolete equipment and the hurdles that come with them," Pier concludes. Fuelberth adds, "Having us as a valued partner allows you to focus on the 'now' leaving data center personnel to do what they need to normally do." P

SECURE MDE
MOBILE DATA ELIMINATION

PROCESSOR COMPANY TO WATCH

Company Name: Secure MDE
Location: Denver
URL: www.securemde.com
Date Company Founded: 2006
Interesting Fact: Secure MDE is a subsidiary of Luminous Recycling, which is actively involved in the recycling of electronics of all kinds.

> "We handle all aspects of the project, including logistics; our people take care of everything."
>
> *-Secure MDE's Steven Fuelberth*

News

Clean Technology Investments Are On The Rise

Venture capital investments in clean technology companies have increased from $3.7 billion in 2009 to $3.98 billion last year, a growth of 8%, according to a recent report from Ernst & Young. Solar power, which is included in the Energy/Electricity Generation segment of the clean-tech industry, saw an investment growth of 77% to $1.58 billion, while investments in the Industry Products and Services segment, which includes transportation and consumer products, grew by 79% to $1.24 billion.

A few important factors have influenced this recent growth, analysts say. "We are focused on multiple drivers in the market," says Jay Spencer, the Americas cleantech director at Ernst & Young. "These include the growing world population and the rise of emerging markets as well as price concerns and the scarcity of natural resources."

Spencer says the need for alternative power sources is one of the reasons clean-tech companies started emerging in the first place. And it's important for investments to grow but remain flexible as the clean-tech industry continues to innovate and move on to new phases. For instance, it used to be more expensive to invest in solar projects because of infrastructure costs and other factors. But now that some of these resources are in place, investors are focusing more on efficiency-related projects that aim to make existing technology better.

"In 2008 and years prior, the solar industry was capital-intensive with investments going toward building expensive plants for massive solar projects," Spencer says. "Now investments go toward things like efficiency. That way clean-tech companies can take something that is 10% efficient and move it to 15% or 20%."

Potential For Further Growth

Investments in clean-tech are happening in rounds, much like in other industries, Spencer says. The first and second rounds encompass the startup and conceptualization stages. And the third and fourth rounds are where the company needs capital to get their product or service to market. Venture capitalists continue to invest, and big corporations have started publicly announcing their clean-tech investments. Because these investments are occurring throughout the entire process, Spencer says, there are signs that this recent growth should continue into the future.

"The market drivers are in place, and the innovation will continue," Spencer says. "I see these investments continuing to be strong and growing for years to come. It's an exciting time to be involved in clean-tech."

by Josh Compton

News

Teradata Buying The Rest Of Aster

Teradata plans to increase its stake in Aster Data Systems. Teradata, a data warehousing appliance vendor, currently owns 11% of Aster and has signed an agreement to buy the remaining ownership interest in the data gathering and analysis firm, net of debt and other expenses. The merger cost $263 million in cash and should culminate in the second quarter of this year. Teradata says that it views the Aster acquisition as an essential step as the data warehousing space increasingly hinges on integration of diverse, unstructured data.

Federal IT Wasteful, GAO Says

The Government Accountability Office has released a sizable report detailing costly redundancy and overlap among federal agencies, offices, programs, and initiatives. Specific to the IT processes in place, the GAO highlighted areas in which the government reportedly could save billions of dollars. The report listed wasteful factors such as legacy systems, an inordinately high number of government data centers, duplicated data and data entry (sometimes within the same entity), incompatible standards and processes related to electronic medical records, and more. The GAO's report includes recommendations for correction or minimization of the problems.

Latest Figures Show Slight Growth In Telephony Market

The market for enterprise unified communications, VoIP, and TDM equipment grew 7.4% between 2009 and 2010, according to Infonetics Research. The research also shows that the fourth quarter marked the third straight quarter of increases. The PBX and UC market reached a total of $8.3 billion in sales last year, which was up from $7.7 billion in 2009. Central and Latin America experienced a 20% jump in PBX spending during the fourth quarter. North America had a 5% drop in PBX spending but was the biggest contributor to growth in the overall enterprise telephony market during 2010. Avaya and Cisco are the two largest PBX equipment vendors. Both companies had strong growth in 2010, with Avaya slightly ahead of Cisco.

Android Tops In Smartphone OS Market; Apple & RIM Lead In Devices

According to a new report from Nielsen, Google's Android platform garnered 29% of the smartphone OS market from November 2010 to January of this year, and Apple's iOS and RIM's BlackBerry OS are close at its heels, each with 27% of the market. However, when it comes to actual devices, Android's lead becomes less clear: Because Apple and RIM each produce the devices that run their operating systems, they hold the top two spots in the device market's top five vendors, with 27% apiece, whereas Android's platform market share is divided among devices from HTC, Motorola, and Samsung. HTC's share of the smartphone market is 19%, which includes 12% from Android devices and 7% from Windows Mobile devices; Motorola has 11% total, 1% of which is from Windows Mobile; and Samsung's total share is 7%, with 2% coming from Windows Mobile devices.

FEATURE PACKAGE

Environmental Overseers

Sensaphone Helps Enterprises Avoid Disaster By Monitoring Environmental Conditions

by Dan Heilman

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Aston, Pa.,-based Sensaphone, which designs and manufactures remote monitoring systems for a variety of personal and business applications, has stepped up its place in the IT and data center market to become a primary player in that space. Altogether, the company has more than 300,000 monitoring systems in use throughout the world.

Sensaphone (www.sensaphone.com) got its unique start in 1983 as a division of Gulf+Western, a now-defunct conglomerate that had a hand in industries ranging from movies to defense contracting. Executive Ken Blanchard, who is now the president of Sensaphone, had a boat docked in Maryland's Chesapeake Bay, and one day after a storm, the boat's bilge pump failed and the boat sank. Blanchard asked Gulf+Western engineers to develop a system that could notify him when his boat was in trouble, and the company's Sensaphone division was born.

"Ken figured there must be a way to notify people when there's a problem, and in the early '80s there really wasn't," says Bob Douglass, Sensaphone's vice president of sales and marketing. When Gulf+Western divested itself of a number of its divisions in 1985, Blanchard bought the division and established it as an independent business. Sensaphone's initial applications were in the residential market, but the company quickly grew from catering to people who wanted to know when the pipes were frozen in their vacation homes to meeting the needs of industrial and commercial environments.

"Ken was smart enough to realize that the potential was far beyond people with vacation homes," says Douglass, who has been with Sensaphone since 1985 and originally worked in development and engineering for the company. "That monitoring ability applies to greenhouses, oil and natural gas, water treatment stations—all kinds of things. It was his vision to shift the focus of the product line to more commercial and industrial applications."

Solutions For All Settings

Sensaphone, which produces all of its products onsite without the help of subcontractors, offers three main tiers of products for the data center—a market segment that Douglass says "has been one of our strongest and fastest-growing areas for monitoring and alarm notifications."

The entry-level Web600 is an Ethernet-based product that can monitor up to six conditions: temperature, humidity, power failure, water on the floor, smoke, or fire. The product has a built-in Web interface and functions as a Web server. It can also be configured to send emails or texts when a problem is detected.

The next step up is Sensaphone's IMS-1000 (Infrastructure Monitoring System), a 19-inch rack-based system. The communication in this system travels by both Ethernet and phone line. "Most of the other products on the market are Ethernet-only, but if your network goes down, you can't communicate," Douglass says. "Whenever your network is down, you'll probably still have phone service—phones are still more reliable than Internet in many cases. This gives you that redundant backup."

The IMS-1000 will make a voice phone call using a voice integration system and use voice to actually describe the issue—for instance, "server rack 12, row 2, temperature is running at 97 degrees." Also, if users suspect a problem, they can phone into the system and have it describe the current conditions.

The plug-and-play system, which comes with built-in battery backup, uses sensors with CAT 5 cable (meaning no more cutting and stripping wires) and can monitor up to eight sensors.

Sensaphone's top of the line for data centers is the IMS-4000 system, which does everything the IMS-1000 system does but is a more expandable, robust enterprise-level product. Boasting an internal battery backup, the unit lets users do network diagnostics—or traceroutes and pinging of other locations—with a touch-tone phone from any location, and it will come back with a voice that says whether a sensor is responding.

"It has a master/slave setup where the host unit can be in your main location and the expansion nodes can be anywhere, since they're network-based," Douglass says. "We have enterprise customers where the products are all in different cities, but there's one master management system. If communication drops off between modules, it automatically generates a diagnostic report."

The Future Is Wireless

Sensaphone is about to release wireless sensors for the IMS-4000. Within the year, it also plans an as-yet-unnamed entry-level product that will enable wireless monitoring of data centers.

The focus in the data center of 2011 is not just on reliability but also on efficiency in cooling, power, and other crucial operating areas. That's where wireless monitoring comes in, Douglass says. "When [customers] set up a new data center, they want to do temporary testing—what's airflow like in this specific location?" he says. "They want to be able to put wireless sensors everywhere, adjust what needs adjusting, [and] then take the sensors out and move them elsewhere."

Douglass adds that because Sensaphone is in so many markets—including military and disease control—it's had to learn a lot about reliability over the years.

"The world is becoming more dependent on uptime," he says. "There are so many more Web-based services, and 99.999% reliability isn't good enough. So it's all about early warning and early notification—better communication and reliability all around."

He adds, "You need the redundancy and standalone operation you get from wake-up circuits, watchdog circuits, and surge protection. When that really big disaster happens, the product is still going, and it will communicate one way or the other." P

SENSAPHONE®
REMOTE MONITORING SOLUTIONS

PROCESSOR COMPANY TO WATCH

Company Name: Sensaphone
Location: Aston, Pa.
URL: www.sensaphone.com
Date Company Founded: 1983
Interesting Fact: Sensaphone started as a division of super-conglomerate Gulf+Western.

> "You need the redundancy and standalone operation you get from wake-up circuits, watchdog circuits, and surge protection. When that really big disaster happens, the product is still going, and it will communicate one way or the other."
>
> *- Sensaphone's Bob Douglass*

NETWORKING & VPN

CLOUD TIPS & TRICKS

Are Cloud Cost Savings MYTH OR REALITY?

Setting The Right Expectations Is Key To A Successful Transition

BY JULIE KNUDSON

So which is it: Does cloud technology save you money or doesn't it? It turns out the answer is both yes and no. Here are some tips to help you navigate the potential cost savings, find ways to get the best return on your investment, and identify areas where you probably won't save any money at all.

Focus On ROI & Total Cost Of Ownership

Enterprises moving to the cloud should focus on long-term cost and service benefits instead of quick savings. "If you're going to buy all of the equipment and not do cloud services, you're going to have a huge upfront capital investment of paying for all that equipment and having it installed," says Peter Marsack, vice president of Vision Computer Solutions (www.vcsolutions.com). "If instead you're going to cloud services, you're not going to have anywhere near that investment, but you're going to be paying it over time and you're usually going to be paying somebody else to manage it. There's an immediate cash savings there, but it's all about the TCO." Marsack says he's a firm believer that, if done right, cloud services will give enterprises a lower TCO, but he cautions that returns will be measured in years, not months.

Manage Transitional Cost Expectations

Transitioning to the cloud is rarely an all-or-nothing proposal. Instead, most enterprises wisely adopt a more methodical plan. "I don't think anyone's going to go wholesale from doing everything internally to doing everything on the public side, but the important thing to consider is how to migrate gradually from one to the other," says Keith Morris, vice president of marketing at Talari Networks (www.talari.com). "You may end up with two sets of infrastructures for a while as you make that transition, and moving one or two things may not save a lot of money initially." Understanding how costs will change throughout the transition is critical.

Monitor Service Levels

Maintaining existing service levels is non-negotiable: A transition to the cloud simply can't degrade the services your customers and internal users receive. "If you're moving something out of the office, then you have to think about how to make that application perform as well as it did when it was physically local to where the customer was using it," Morris says.

Data center managers should look at factors that affect performance, including whether firewalls will reside locally or be implemented through backhauling to an existing data center and how remote sites will access the cloud. When setting cost expectations, Morris advises enterprises to acknowledge that service and access infrastructures must be adequately supported in order to continue providing the same levels of service.

Leverage Experience

Your internal team's experience is just as important as the expertise your provider brings to the table. "Most of these cloud-based technologies have their roots in virtualization," Marsack says. "Your implementers need to have experience with that type of technology and the ability to not only set it up, but to migrate over to it." Don't rely solely on your vendor to create and implement a cost-efficient transition plan—your team's buy-in and support will be critical. P

Best Tip: Don't Skimp On Bandwidth

Accept the fact that connectivity costs are likely to rise with any move to the cloud. "In a cloud scenario, your Internet connection becomes critically important," says Peter Marsack, vice president of Vision Computer Solutions (www.vcsolutions.com). "That typically means you'll be spending more—a lot of times significantly more—on the strength and integrity of your Internet connection." Remember, too, that backhauled services from remote locations will also eat into your bandwidth, thus further increasing your connectivity costs. But it's money well spent: Sufficient access is the foundation for every successful cloud service implementation.

NETWORKING & VPN

Mix Cloud & Local Applications

Runaware's Hybrid Approach Makes It Possible

by Nathan Lake

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With Runaware's Hybrid Approach, independent software vendors can reach out to customers that want to receive their applications over the cloud, as well as through traditional, locally installable software. The flexibility is ideal for ISVs that are looking to gain a competitive advantage by offering local and SaaS versions of applications.

Runaware's Hybrid Approach offers a number of benefits. In terms of SaaS advantages, "ISVs can move their existing software application to the cloud in a minimal amount of time vs. having to completely rewrite the application," says Tim Keyes, CEO at Runaware. "Also, unlike other cloud vendors who require the software to be written exclusively for their cloud platform, Runaware ensures that the application can run on our cloud platform as well as on Microsoft's, Amazon's, and any other cloud provider's platform."

Important Step

Adding a SaaS or PaaS version of an application is an important step for ISVs. "Cloud computing enables ISVs to deliver applications and services to the end users faster and cheaper, while helping them avoid wastage and IT management burden," Keyes says. Lower licensing costs and the ability to create mash-ups helps ISVs attract larger and new customers. The marketing upswing of the SaaS application could also lead to growth for the local version.

The presence of a SaaS application can also identify an ISV as a SaaS-capable vendor that can meet existing and new customers' cloud demands. "As cloud computing is still new, there is plenty of opportunity for market leadership, which is why cloud's growth is expected to be about five times larger than the rest of the IT services' compound annual growth rate," Keyes says.

Additionally, local and SaaS applications may be able to seamlessly integrate with each other so users can work in online, offline, or weak-line scenarios. Offering both SaaS and local versions also gives early adopters a way to transition from having everything on a computer to being able to access files from anywhere in the world. The Hybrid Approach will simplify application support, because there's no need for software CDs or downloads, so an ISV can update the entire customer base much quicker and at a lower cost.

Lower Costs

With Runaware's Hybrid Approach, customers will also be able to lower costs, because they'll no longer need to purchase a license for every employee. End users who only need the applications a few times a year can rent licenses for the cloud offering using a subscription model that pays for use during a given duration of time, saving customers from paying a hefty one-time license fee. The fee structure can also be more profitable for ISVs because improved accessibility and affordability can improve turnovers. Application developers will like the SaaS option because they can continuously improve user experience through frequent updates, which lightens the burden of serviceability.

The blended offering of Runaware's Hybrid Approach gives an ISV an opportunity to become a leader in the software industry, and it does so without sacrificing the offline ability that many customers still require for applications. "History has shown us that in the software industry, the company that is the first to market ends up owning their vertical market," Keyes says. Runaware has the tools to help ISVs maintain the status quo and help their end users move toward the future. P

Runaware's Hybrid Approach

- ISVs can expand market reach and revenues through SaaS versions of applications.
- Local and SaaS apps can work together to allow customers to work in both online and offline environments.
- A SaaS version can help attract new customers, which may also help the marketability of your locally installed application.
- The Hybrid Approach lets you create a single platform for quickly providing improved versions to end users, which can help customer satisfaction.
- ISVs can use the Hybrid Approach to establish themselves as a player in their vertical market.

News

USC Scientists Report On World's Technological Capacity

In 2007, human beings could store 295 exabytes of information in their technological devices, according to scientists at the University of Southern California. An equivalent stack of CD-ROMs would reach farther than the moon, the scientists say. The study, which calculated the world's technological capacity to store, communicate, and compute information, tracked 60 analog and digital technologies from 1986 to 2007. The study's authors, Martin Hilbert and Priscila Lopez, used more than 1,100 sources to generate their findings.

"The statistics we rely on include databases from international organizations, historical inventories from individuals for commercial or academic purposes, [and] publicly available statistics from private research firms, as well as a myriad of sales and product specifications from equipment producers," the study says.

Among the study's findings are that humankind received 1.9 zettabytes of compressed information through one-way broadcasting channels, such as television, in 2007. We communicated 65 exabytes of information through two-way telecommunication channels, and we could compute 6.4 x 1018 instructions

per second using all of the world's general-purpose computers. The study also found that since 1986, general-purpose computing capacity grew at an annual rate of 58%, and the world's capacity for storing information grew at 23% per year. Bidirectional telecommunication capacity grew at 28% per year.

Evidence For The Digital Age

The study is significant because it gives hard evidence for "the increasing trend of digitization," Hilbert says. "We often talk about the 'digital age' in which we supposedly live right now, but we did not have any concrete knowledge about how much of our information is already being digitized and when the 'digital age' started," he says.

Hilbert and Lopez estimate that it was in 2002 when humanity first stored more information in digital than analog format. The transition from analog to digital happened very quickly, he adds. "In the year 2000, still 75% of all information was in analog format, mainly consisting of analog video cassettes, like VHS, which are still lingering somewhere in many homes, and in 2007, already 94% of our global technological memory consisted of digital bits and bytes," he says.

The USC study also found that humanity's capacity to compute information has grown much more quickly than our capacity to communicate, Hilbert says. "It seems like the key characteristics of the 'information age' are the capacity of humankind to incessantly compute information day and night in our computational devices and to store vast amounts of information in gigantic memories," he says.

by Kyle Harpster

Cloud Control

No Need For Cloud Sprawl

by Jean Thilmany

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Provisioning in the cloud is convenient and quick, which provides both agility and potential for abuse. Taking control can admittedly be difficult. Migrate too much or move too quickly and IT can face loss of control and exponential costs. And as applications move between physical, virtual, and cloud environments, IT has an even more difficult time monitoring and reporting on service-level agreements.

On top of that, IT managers may be required to purchase individual point tools to manage it all. So how can you take control of the cloud environment and prevent cloud sprawl?

Manage The Cloud

Alex Bewley, CTO at Uptime Software (www.uptimesoftware.com), offers some advice that can help managers take better control of their cloud environments and prevent sprawl.

First, he says, managers need to determine exactly what's running on their on-premises and virtual systems. Next, he suggests a monitoring tool that can track those systems as well as any cloud applications deployed by the enterprise. Unfortunately, selecting such a tool isn't easy.

"There [are] a lot of systems management vendors out there," he says. "You need a vendor who's aware that you're not going to go pure cloud or pure virtual or pure on-premises; you'll have a combination of all three."

Key Points

- To prevent sprawl, choose a systems management tool that can monitor on-premises, virtualized, and cloud infrastructures within one tool.
- When moving enterprise-critical applications to the cloud, ensure those applications are sufficiently backed up; otherwise don't move them to the cloud.
- Communicate regularly with vendors and others in the IT department; cloud deployments and costs can grow swiftly and can become out of control without constant communication.

Design or select software that is distributed and loosely coupled, Rocamora says. "Not only will this provide more reliable services, it allows a business to scale services up and down quickly to handle demand and manage costs," Rocamora says.

Managers should also make sure that everyone involved with the cloud computing project communicates regularly, he adds. "Cloud computing providers make it simple to use more storage, spin up more instances, or create more accounts," he says. "All these things have the potential to increase complexity and costs." Make sure that everyone is in agreement about the computing needs for the enterprise, which can reduce the amount of cloud resources allocated, Rocamora adds.

> "You need a vendor who's aware that you're not going to go pure cloud or pure virtual or pure on-premises; you'll have a combination of all three."
>
> *- Uptime Software's Alex Bewley*

Some vendors make solutions that allow IT to monitor the physical, virtual, and cloud infrastructures in tandem. "Then, as you start to migrate more apps into the cloud, you'll still have a single console to monitor those from," Bewley says.

Another option is a cloud management tool that scales bandwidth used in the cloud automatically up or down, depending on use, says Michael Crandell, CEO at RightScale (www.rightscale.com). So when business-use loads increase, an enterprise will see freed-up server space, which will automatically decrease when loads decrease.

This prevents cloud sprawl because enterprises need not purchase more server space in the cloud than they need, Crandell says.

Start & Stop

Dave Rocamora, senior consultant at technology services firm Control Group (www.controlgroup.com), says an enterprise's biggest advantage in the cloud is the capability to start and stop computing resources at a moment's notice, he says. IT managers should be thinking about that capability as they acquire or develop software and services for the cloud.

And Rocamora's biggest tip: Stay flexible. Open tools allow the same computer templates to be applied to nearly any cloud provider or physical infrastructure. "Using a systems automation tool in this way gives businesses the chance to use whatever cloud is appropriate," Rocamora says.

Consider Cost

Though cloud computing comes with its own set of considerations, perhaps the most important of these is cost, says Jeff Huckaby, CEO at Rackaid (www.rackaid.com). "Noting these costs can provide a good check on cloud sprawl," he says.

When looking at the cost of the cloud, pay careful attention to bandwidth, Huckaby says. Depending on the cloud model, bandwidth can be considerably more expensive than some noncloud alternatives. "If you were operating with leased dedicated hardware or colocation, you may not have considered the per-application bandwidth usage," he says. "It's important to understand the full cost metrics of your application before moving to the cloud."

He also encourages IT managers to track the cost of licensing, backup systems, and management tools. "Often, when people move to the cloud they use a one-application-per-cloud model," he says. "But many IT monitoring and backup solutions are licensed per-server or per-agent. If you split a dedicated server into several cloud instances, this could drive up these costs." Managers should check with their application vendors to see how vendor licensing works within the cloud environment, he adds.

Another way to prevent sprawl is to not move particular applications to the cloud in the first place, he adds. IT managers cannot rely on the cloud vendor when it comes to recovering lost data. Having off-site backups or recovery options is key, Huckaby says.

Before moving core operations into the cloud, IT managers should determine how an outage in that operation service area would impact business and weigh the answer against the current model of deployment—whether it's on-premises hardware or a virtualized solution, he says. "For core operations, the ability to recover from disaster may be more important than the utility the cloud brings," Huckaby says.

How It Works

In that same vein, IT managers must make sure they truly understand how the cloud functions as well as the need an enterprise might have for the cloud, says Kevin Burke, vice president of marketing for Virtacore (www.virtacore.com).

In January, a Virtacore survey found that 64% of employees at enterprises with between 100 to 1,000 employees don't understand the definition, role, and potential of cloud computing. Even among those who identified themselves as working on the IT side of operations, nearly half said they don't understand what "the cloud" means.

As with all things IT, investigation and communication before jumping into cloud computing is key. P

Temporary Help

IT managers can cut cloud costs by considering cloud services for temporary needs, says Jeff Huckaby, CEO at Rackaid (www.rackaid.com).

An enterprise that maintains servers with various versions of operating systems can move them to the cloud, save cloud images, and turn them on when needed, Huckaby says. Many enterprises will find they need these cloud resources for fewer than four hours at a stretch.

The move to a temporary cloud can save money by eliminating maintenance costs for the on-premises servers, he says.

SIX QUICK TIPS

Testing & Troubleshooting A Fiber Network

Keep Your Optical Network Running At Optimal Speed

by Bruce Gain

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Fiber-optic networking has slowly but surely emerged from R&D labs to serve as the backbone of telecommunications networks around the world. But while enterprises outside of the telco industry are just beginning to adopt fiber-optic networks for their data centers and even end users, the future looks promising.

But, like almost everything in IT, much hands-on testing and troubleshooting know-how are required to take advantage of fiber networks. Whether your enterprise has already installed fiber-optic networks or plans to implement the technology in the future, here are some things to keep in mind when making a plan to resolve problems and when performing tests.

Test The Throughput

The importance of testing to make sure that fiber-optic interfaces can handle data traffic is so obvious that it seems hardly worth mentioning. However, many enterprises neglect to do this very simple and obvious qualitative test.

"One of the most common mistakes we see in network deployment and testing/troubleshooting is that interfaces and multiplexers need to have enough throughput to handle the entire connectivity requirements of [what] is being installed," says Jason Cohen, president and chief operating officer of Allied Fiber (www.alliedfiber.com). "Often IT organizations will purchase new fiber routes and super high-performance computing equipment but not be aware that a network interface or multiplexers interconnecting the computing equipment together over the fiber are a bottleneck. It's not enough to deploy high-speed computers and/or cutting-edge fiber-optic cables—if the fiber-optic interfaces and multiplexers are unable to handle the processors' throughput, the overall computing performance will be degraded.

Also, tests might reveal that multiplexers are unduly slowing down data transfer rates. "It's similar to buying a fast sports car where the engine (or computer) can go as fast as 200mph, and the track (or the fiber) is smooth and straight and capable of supporting 200mph speeds, but the tires on the car (the multiplexers and interfaces) can only support 50mph speeds," Cohen says. "One must not overlook the importance of the network interfaces and multiplexers when trying to ensure that the entire computer processing infrastructure is running at an optimal speed and performance."

Check The Installs

A highly recommended construction firm has just completed construction of your data center's fiber network. But while you might think that the brand-new infrastructure is ready to run, now is when testing is especially important, says Jason Tarn, a product marketing manager for Fluke Networks (www.flukenetworks.com).

"Contractors generally do a good job, and there is usually implicit trust in them, but it doesn't hurt to have a bit of verification where you have your own certification process in place where you do random spot checks after the installation. You need to make sure that the contractors are actually certifying, as opposed to just performing quick verification tests," Tarn says. "A lot of times it costs money to purchase certification equipment, and it takes time to do the tests, but proper certification involves several steps that spot checks do not involve."

If you do not have your own equipment in place for certification, you need to require proof from the construction firm that it has performed the tests. "It is necessary to mandate from the installer pass/fail measurements [that are required for the certification process]," Tarn says, adding that many enterprises fail to demand proof that construction firms have completed certification tests.

Know Thy Technology

Optical networking involves routers, switches, cables, and other equipment that is very different from that of traditional electrical networks. New equipment and processes thus need to be mastered and new skill sets learned. Not having a solid understanding of your optical network's processes and infrastructure can pose problems when testing and troubleshooting—in a nutshell, it is necessary to realize that processes used for traditional LANs are not the same as those for fiber networks.

It is therefore critical to keep track of all optical technologies that you purchase for your enterprise in order to achieve optimal results when testing and troubleshooting, says Monisha Merchant, senior director of product management for Level 3 (www.level3.com). "Work with both your capacity providers and your [users] so that everyone understands the expectations of the service to eliminate the common misperceptions on services sold," she says.

Keep It Clean

Dust and other contaminants can cause major problems with most IT equipment, but with optical networks, testing for cleanliness is especially important. When troubleshooting, removing particulates from a multiplexer or cable connections, for example, may often be enough to restore optical connectivity when a connection goes bad.

"We have found that over 80% of fiber failures in certification tests were a result of contamination," Tarn says. "Given the size of fiber core diameters, you are looking at something even smaller than a human hair, so it just takes a single microscopic speck of dust or lint to cover it up. We have found that there is a lot of ignorance in the field, whether you are a network engineer, a technician, or an installer." P

Best Tip:

Keep It Simple

There are many reasons why maintaining uncomplicated network topologies is a good idea, but when it comes to testing and troubleshooting fiber networks, keeping it simple is especially important. "The more standard the network topology, the easier it is to manage and maintain," says Monisha Merchant, senior director of product management for Level 3 (www.level3.com). "Keep the number of different network platforms down to a core minimum so the configurations, expected operations results, and repair actions can be easier to manage."

Most Practical Tip:

Prepare For Troubleshooting

Preparing for contingencies is a critical element in any IT department's best practices, but with a new technology such as fiber networks, having a troubleshooting plan in place for when the worst happens is especially important. It is necessary to determine beforehand exactly who will perform what troubleshooting tasks and what their roles will be long before problems begin.

"Failure is inevitable, and with fiber, once there is failure, the objective is to immediately determine who finds and fixes the problems," says Jason Tarn, a product marketing manager for Fluke Networks (www.flukenetworks.com). "It is human nature where you want to assume that things can work fine, but when things hit the fan and you don't have the procedures and staff in place, it is too late. You need to be proactive and prepared."

BONUS TIPS

■ **Embrace automation.** Optical networking is not an area in which you want to try saving money by performing tests and troubleshooting manually. Automation should therefore be a key element when testing and troubleshooting fiber networks. "A lot of companies have developed solid troubleshooting systems that have increased their ability to test/isolate services faster with a more consistent result vs. companies that have a lot of staffing overhead with manual processes," says Monisha Merchant, senior director of product management for Level 3 (www.level3.com).

■ **Map the network.** It is critical to have your fiber network's topography mapped out and readily available when testing and troubleshooting. "Make sure that you understand where your network is running and how it's configured to get there, for both [testing] and repair actions," Merchant says.

BACKBONE SECURITY STEGALYZERRTS (STEGANOGRAPHY ANALYZER REAL-TIME SCANNER)

NEW PRODUCT

by Seth Colaner

Protect Your Enterprise's Data From Insider Threats

Steganography, which is the art of hiding information within something else, has been around since the time of Ancient Greece. Today, it has taken the form of embedding files within other files or appending files to other files in such a way that they're virtually undetectable.

In the digital age, steganography is a threat to information security, as it allows business insiders to pilfer sensitive information, such as personally identifiable information, protected health information, and intellectual property, without detection. Such compromised information can be dangerous in the hands of identity thieves and corporate crooks.

To combat insider theft of sensitive information, Backbone Security's SARC (Steganography Analysis and Research Center), the global leader in digital steganalysis, developed the world's only network security appliance for detecting insider use of steganography in real-time.

The Steganography Analyzer Real-Time Scanner, or StegAlyzerRTS, operates on both 100Mbps and 1Gbps networks and detects insiders downloading or using steganography applications in real time, which is typically an indicator that a particular individual plans to commit data theft or is in the process of doing so. The appliance relies on the SARC's library of more than 900 steganography applications, uses a unique signature-based model to detect the signatures of more than 55 steganography applications, sends network security administrators real-time alerts, and keeps a record of suspicious files for further investigation, all without affecting network performance.

In addition to StegAlyzerRTS, the SARC also offers digital forensics tools for conducting steganalysis during forensic examination of seized storage media.

Backbone Security StegAlyzerRTS

An information security program that protects enterprises from data loss by scanning networks and communication for hidden steganography applications.

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SECURITY

Of Special Interest To Health Data Centers

Secure Medical Records

Electronic Access Means Privacy Challenges For IT

by Christian Perry

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Technology's incessant drive toward flexibility and ease of use occasionally brings with it a catch-22. Perhaps nowhere is this more evident than in the medical field, where the continuing implementation of electronic medical records is simultaneously improving patient data management and creating potential security leaks. Although medical records systems are inherently secure for the most part, facilities nonetheless face the constant threat of theft from insiders.

"While hospitals and other health organizations go to great lengths to protect patients' health information, the risk is still present that this information may be viewed or distributed inappropriately," says Michael Bilancieri, director of product management at Imprivata (www.imprivata.com). "Whether it is due to accidents, mistakes, or malice, the possibility exists that even secure environments could have a breach."

Threat Identification

Potential threats to the privacy of medical records are certainly not a new problem. As Martin Hack, executive vice president of NCP Engineering (www.ncp-e.com), notes, anyone in the past with access to paper charts and file cabinets could examine patient files, but now patient information is spread through provider networks, insurance companies, and other parties who work with patient health information. As a result, the threat has morphed into one that's far more complex and significantly harder to control.

"The biggest challenge is probably differentiating between what's legitimate access and what's not," Hack says. "Healthcare is a highly dynamic environment, and someone who has access to records may not [have access] three months down the road, and the [remote] access management system has to be able to account for that. And on top of that, there's a huge amount of data within the providers' own systems and other covered entities that they might share the data with. Being able to connect securely and easily between these organizations should be a top priority."

The balance of easy access and security represents a constant battle for IT personnel in the healthcare field, who must interact with medical professionals who might not completely grasp the extent of potential threats. Part of the challenge, according to Bilancieri, is identifying where PHI (patient health information) might be at risk, such as removable storage devices that can limit the controls IT departments have over data. The increased use of mobile devices, such as smartphones and tablets, to access systems (and not always in a managed way) further complicates the task of controlling and managing data.

In this instance, monitoring tools that report on user access to EMR and other systems that contain PHI can help illuminate potential unauthorized access and other privacy-related problems. Bilancieri also recommends locking down endpoints to prevent data from being copied to external or removable devices, which can be lost or stolen, and implementing solutions that enable strong authentication (rather than just simple passwords).

Act On Access

Without thorough planning and policy enforcement, the prospect of effectively protecting patient data is weak at best. Access—and the ability to prevent it—is the most critical factor when developing a strong data protection strategy, and how you approach access will go a long way toward your future security. Kurt Johnson, vice president of strategy and corporate development at Courion (www.courion.com), notes that an access assurance strategy ensures the right people have the right access to the right resources and are doing the right things with them.

"The key to protecting sensitive patient information from insider threats is defining, assessing, enforcing, and verifying strong access control policies to EMR systems and other corporate assets. This is often a challenge for IT professionals in the healthcare industry, as staff turnover can be frequent, employees' roles are constantly changing, and there is often a high level of contract work being performed. On a daily basis, hundreds of user accounts may need to be set up, changed, or disabled," Johnson says.

However, the expectations that providers can effectively manage patient-level access are likely too high, warns Tom Loker, COO at Ramsell Holding (www.ramsellcorp.com). Even when access lists are created, rules are applied, audits are run and reviewed, and unauthorized access is discovered and potentially prosecuted, these steps are only as effective as the diligence of personnel administering the systems, he says. Further, he argues that today's systems are limited in terms of their inherent security, although more secure systems based in the cloud are on the way.

"Another significant challenge is frankly the lack of understanding as to the real threats and the true benefits of the systems themselves, and who should actually be in charge of the records and their distribution," Loker adds. "Some believe that the systems need to be insurer- or payer-focused. Others believe they should be provider-focused, and many more are coming to the belief that they need to be patient-focused. The patient, as the ultimate buyer of the services, needs to have the systems designed and implemented so that they are the arbiter of who gets to be in their virtual care group and who gets to see what."

Loker recommends that privacy officers engage in constant and thorough training on emerging technologies, particularly because many were trained primarily on prior paper-based systems. Further, he says, some of these officers juggle real risks to their livelihood, economic liability, and reputations should a breach occur with the ever-increasing demand for access from patients, providers, insurers, and government authorities. Simply erring on the side of maximum security, Loker warns, will leave the benefits of EMRs on the sideline. "Privacy officers need to be able to compare the risks against the savings and then be in a position to proactively and effectively educate their constituents and provide effective systems that put the patient in control and actively responsible for their own privacy," he says. P

Key Points

- The rise of electronic medical records can create a complex, tough-to-manage ecosystem for personnel charged with protecting patient privacy.
- Identifying where and when patient health information is at risk through the use of monitoring tools can help keep records secure.
- The creation of thorough, stringent policies is critical to ensuring the right people always have the right access to patient information.

Policy Planning

Creating a policy that protects sensitive patient information from unauthorized users while providing proper access to authorized users is a crucial strategy for any medical facility. Kurt Johnson, vice president of strategy and corporate development at Courion (www.courion.com), outlines the following steps for developing this type of strategy.

- Define a user access policy that allows or restricts access according to authorization level.
- Assess how user access and activity affect risk.
- Enforce automated access policies on an ongoing basis to prevent unauthorized access to sensitive information.
- Review user access policies on an ongoing basis to determine who has access to what sensitive data.
- Verify that current access is appropriate and in compliance with both corporate and industry regulations (remediate access when it is not).

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SECURITY

TECH IN-DEPTH

Key Points

- Multifactor authentication does not mean simply having multiple passwords.
- Requiring users to have something (such as a card or token) or to use a biometric scanner in order to log in can help protect sensitive data.
- A multifactor authentication solution must be easy to use in order to be effective.

Multifactor Authentication

Make Sure Users Are Who They Say They Are

BY CYNTHIA HARVEY

If you've ever logged on to a network or an application, you're familiar with usernames and passwords. But more and more often, enterprises are requiring users to take additional steps to verify their identities. In some cases, these multifactor authentication procedures are required for compliance purposes, while other companies are taking these measures in response to the growing threat of data breach.

Here's a quick overview of what multifactor authentication is, why your enterprise might want to use it, and what you should look for in a solution.

NOT JUST ANOTHER PASSWORD

First of all, "multifactor" does not mean multiple passwords. The Federal Financial Institutions Examination Council (www.ffiec.gov) explains that there are three basic authentication factors used in today's methodologies: something the user knows, something the user has, and something the user is. A multifactor authentication system requires authentication from at least two of these different factor categories.

The typical user ID/password logon procedure asks for two pieces of information, but both items belong to the "something the user knows" category. That's single-factor authentication. If you add more passwords or security questions, it's still only single-factor authentication.

In order to qualify as multifactor authentication, a process must also require users to have something or be something. For example, a user might be required to carry a hardware token or use a fingerprint scanner to verify his identity.

WHY BOTHER?

Some types of companies, such as financial or healthcare institutions, must use multifactor authentication in order to meet compliance requirements. In these cases, failing to implement multifactor authentication isn't really an option.

In many other cases, however, enterprises don't have to use multifactor authentication, but a risk assessment convinces them that a username and password simply aren't enough to protect their data. Some companies may choose to require multifactor authentication for all network access, while others may employ the technology only in certain situations (such as remote access) or for particular applications.

MAKE IT EASY TO USE

Experts agree that one of the most important things to look for in a multifactor authentication solution is ease of use. "If it's not easy to use, users won't adopt the multifactor solution and will find ways to circumvent it," says David Ting, founder and CTO at Imprivata. "It is critical to test a system with a variety of users in real-world scenarios to evaluate what technologies match the particular workflows."

Other things to consider when choosing a solution include whether it will work with your existing database of usernames and passwords and whether it supports mobile devices. Of course, managers will also want solutions that are affordable, reliable, and flexible enough for use in a variety of settings. P

Common Methods Of Multifactor Authentication

CARD READERS. Badge readers can use employees' ID cards to log them into the system.

DIGITAL CERTIFICATES. This method first authenticates a user's PC or mobile device and installs a digital certificate. When the user logs in again from the same machine, the digital certificate allows him to be authenticated automatically.

FINGERPRINT SCANNERS. Many laptops now include built-in fingerprint readers, and scanners can be easily added to desktop systems, as well.

HARDWARE TOKENS. Users have small devices or "tokens" that may plug into a USB port, connect via Bluetooth, or display a code that must be entered manually.

TEXT, TELEPHONE, OR EMAIL. A special code or link can be sent to a user's phone or email address.

DISKEEPER 2011

NEW PRODUCT

by Blaine Flamig

Peak Performance At All Times

IT'S NO SECRET that the daily operations of IT environments are becoming increasingly complicated. And, if left unchecked, performance bottlenecks—inherent to IT infrastructure—can have serious repercussions on productivity across the entire location.

The data performance tools within Diskeeper Corporation's Diskeeper 2011, including tools aimed at enhancing efficiency while reducing operating expenses, can help prevent 85% of data fragmentation from ever occurring in the first place. Such a tool can be a lifesaver, helping to pre-emptively work to combat hits to productivity whether on one PC or within a complex enterprise environment.

With its ability to continually optimize read/write speeds without resource conflicts popping up, Diskeeper 2011 can reduce overall I/O activity by 40% on average. Diskeeper 2011 can also speed up backups by an average of 30% and increase system stability by 30%. Over the long term, Diskeeper 2011 can help extend a system's lifespan by an average of 2.5 years while simultaneously reducing site-wide energy consumption by 12% and also decreasing server cooling requirements.

An Intelligent Approach

Diskeeper 2011 improves system performance, system longevity, and energy usage with the help of such technologies as IntelliWrite and InvisiTasking and a new Instant Defrag Engine.

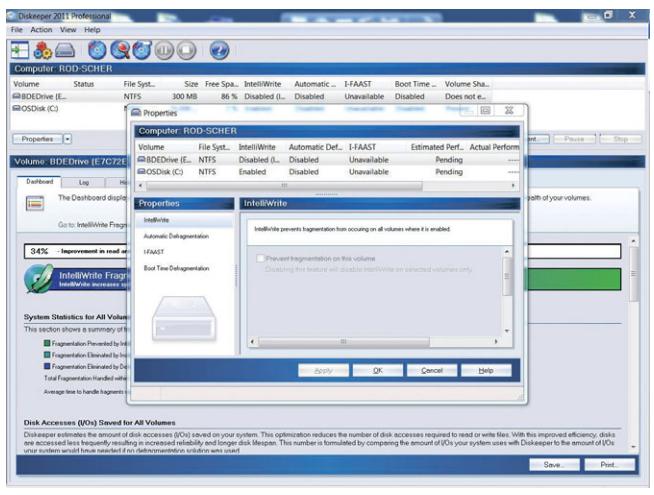
Dubbed "the first pre-emptive solution" for fragmentation, IntelliWrite writes files to disks contiguously, which results in cleaner, faster disks and subsequently the faster reading and writing of files. Where thin provisioned disks are specifically concerned, IntelliWrite prevents fragmentation from occurring without a need to move data that in return increases thin provisioned storage.

Working closely with IntelliWrite is Instant Defrag Engine. The two features quickly eliminate any fragments not prevented during the initial write. For those fragments not prevented, IntelliWrite passes information in real-time to the Instant Defrag Engine for immediate handling. Combined, the technologies enable systems to continually run at peak performance, no matter the workload.

No Resource Conflicts

Diskeeper 2011 also packs a redesigned version of InvisiTasking background processing technology. It's now more assertive in I/O-active environments while still maintaining invisible processing. The enhancements allow Diskeeper to accomplish more defragmentation and resolve it faster during typical production workloads.

A new Efficient Mode in Diskeeper 2011 uses the minimum disk I/O to restore and maintain maximum performance. It is smart enough to detect fragmentation that could prove problematic to system performance and targets it for priority handling. Efficient mode only addresses problem fragmentation and, by eliminating the unnecessary extra effort to get to a state of 0 total fragments, peak performance is restored.



Diskeeper Corporation Diskeeper 2011

Intelligent data performance software that enables faster system performance, longer system lifespans, and reductions in energy consumption with zero overhead required. Its proprietary IntelliWrite technology prevents up to 85% of fragmentation from ever occurring.

The Titan Defrag Engine available in Diskeeper EnterpriseServer quickly but thoroughly defrags mountains of data on volumes measuring 10 to 20TB or more. The result is that Diskeeper 2011 is able to defrag volumes with terabytes of data within hours vs. the days that competing defragmentation tools can take to do the same.

Diskeeper 2011's improved free space consolidation engine works closely with Instant Defrag to consolidate free space and address new fragmentation as soon as it's created. A Terabyte Volume Engine gives Diskeeper 2011 the power to do away with millions of fragments contained on high-traffic volumes packed with large amounts of data. I-FAAST (Intelligent File Access Acceleration Sequencing Technology) works to optimize placement of data that is most frequently accessed, enhancing the creation and access to files an additional 10 to 20% on average on top of the benefits that defragging alone provides.

For businesses, Diskeeper 2011 is available in Professional ($59.95), Pro Premier ($99.95), Server ($349.95), EnterpriseServer ($599.95), and Administrator ($299.95) versions. P

Diskeeper corporation

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News

Report Highlights SMEs' Frustration With On-Premises Security Solutions

Recent research from security company Webroot reveals that enterprises might be spending more time on managing on-premises security solutions than necessary. About 127 IT hours are spent managing on-premises security and related problems at businesses, and simply managing hardware and software updates takes up to 18.6 IT hours per month—more than two full workdays. Other time-consuming tasks include reimaging infected machines and enforcing Internet and email policies. Overall, Webroot found the management of on-premises security solutions to be a burden for small to midsized businesses.

"Traditional on-premises security solutions can't keep pace with today's threat landscape," says Gerhard Eschelbeck, Webroot's CTO. "IT departments at small to medium-sized businesses typically consist of just a few people, and each of them has to wear many hats; security is not their main focus, nor is it their expertise."

Webroot also found that enterprises with a mobile workforce are much more susceptible to infections. Of those surveyed in the study, 33% say securing mobile users is their No. 1 challenge in 2011. Moving to the cloud may be a positive alternative, Webroot says; according to the report, enterprises relying on cloud-based security are actually 30% less likely to experience phishing attacks compared to enterprises with on-premises security solutions. There is also a decrease in the likelihood of attracting viruses and spyware—a 25% and 20% decrease, respectively.

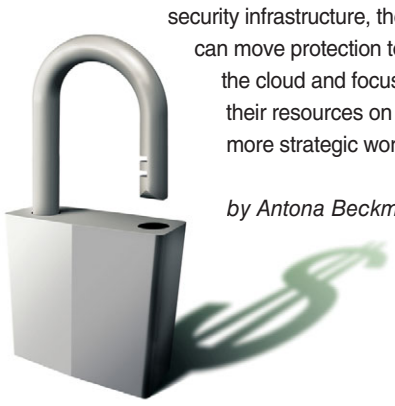
The Benefits Of Cloud Security

Eschelbeck says SMEs should see cloud computing as a promising opportunity. "Cloud security provides small to medium-sized companies with a security infrastructure that is managed by the security vendor, which frees up employees to focus on strategic business initiatives," he says. "Cloud security solutions deliver better protection, are easier to manage, and are more cost-effective than on-premises solutions."

Of those surveyed, 98% of SMEs had mobile employees. These workers are likely to access the corporate network from various locations (airports, hotels, etc.) that could potentially have unsecured Internet connections, Eschelbeck says. "Cloud security solutions are more effective at securing mobile users than on-premises solutions because they extend protection to the Internet layer, instead of securing a perimeter that no longer exists," he says.

"When you factor in the growing trend of mobile workers and the greater rates of infection among highly mobile organizations, IT managers need to seriously question the viability of on-premises security as an effective solution," Eschelbeck says. "Employees are working in the cloud; it is only logical that security should follow them there. The good news for IT managers is that this can ease their burden. Instead of attempting to staff and maintain a large data security infrastructure, they can move protection to the cloud and focus their resources on more strategic work."

by Antona Beckman



SECURITY

Help For Merchants That Accept Credit Cards

Understanding The Changes In PCI DSS Version 2.0

by Bill Hayes

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In late October 2010, the Payment Card Industry Security Standards Council issued version 2.0 of its PCI Data Security Standard. This version is the first to have specific guidance for using virtualization technology to process payment card data. PCI DSS recognizes virtualization technology such as virtual machines, virtual switches/routers, virtual appliances, virtual applications/desktops, and hypervisors.

PCI DSS 2.0 clarified that proper network segmentation may be gained through physical or logical means. Additionally, PCI DSS clarifies that the use of a PA-DSS (payment application digital security standard)-compliant application alone does not make an entity PCI DSS-compliant.

To ensure that merchants understand that PCI DSS does not address just technological issues, the PCI DSS documentation now defines the cardholder data environment as being made of "people, processes, and technology that store, process, or transmit cardholder data or sensitive authentication data."

> "It's not about a tool; it's about understanding your environment and having methods in place."
>
> *- PCI Security Standards Council's Bob Russo*

Favorable Reception

In the months since its introduction, reaction to the new standard has been favorable, says Bob Russo, general manager of the PCI Security Standards Council.

Gartner Group Senior Security Analyst Avivah Litan agrees. "In general, our clients have responded favorably," Litan says. "They didn't get hammered with a lot of new requirements, and most of the additions and clarifications were welcome."

Russo says, "Feedback from organizations is what has made these standards mature and effective. The reception has been positive, as the changes to DSS 2.0 were minimal and a direct result of the feedback we received from our stakeholders."

Most of the changes are clarifications, additional guidance, and evolving requirements, Russo says. "The clarifications around virtualization helped organizations better understand how the intent of 'one primary function per server' could be applied to a virtual server environment. We will have additional guidance on the subject from our Special Interest Group on virtualization to be released later this year," Russo says.

Major Changes

Russo says the changes in PCI DSS 2.0 did not introduce any new major requirements. "The changes provide greater clarity and flexibility in understanding and implementing the standards," Russo says.

According to Russo, PCI DSS now reinforces that all locations and flows of cardholder data should be identified and documented to ensure accurate scoping of the cardholder data environment. Unknown data stores have been the source of numerous compromises, he says, and the PCI Security Standards Council felt that additional guidance in this area was necessary to help entities identify where their cardholder data is so that it may be appropriately protected.

"It's not about a tool; it's about understanding your environment and having methods in place," Russo says. "We've also added a subrequirement for payment applications to support centralized logging, which helps organizations more readily detect suspicious activity," Russo notes.

Requirement 6.2 has also been updated to allow vulnerabilities to be ranked and prioritized according to risk, Russo says. "Although this is not a new requirement per se, the council recognizes that an additional effort may be required to implement a risk-ranking process," Russo says. Risk ranking will not become a formal requirement until July 1, 2012, to ensure everyone has enough time to implement a compliance process, he says. "Until that time, it is considered a best practice and a recommendation," Russo says.

Key Points

- The Payment Card Industry Data Security Standard version 2.0 now includes requirements for securing virtual machines, based on many of the same security principles used for hardware devices.
- Requirement 6.2 mandates that after July 1, 2012, PCI merchants must use a vulnerability ranking system to quantify security vulnerabilities and prioritize their resolution.
- PCI DSS represents an ongoing security compliance requirement and not a one-time certification. All merchants that accept credit cards must comply with its requirements.

Securing Virtual Installation

According to Cortland Little, senior security strategist for Solutionary (www.solutionary.com), there are three key tasks that should always be done when securing a VM installation.

"First, always use antivirus protection on every VM." Because the hypervisor doesn't have any services that respond to remote protocols, the target footprint to compromise the hypervisor will largely come from the virtual machine, Little says, so preventing infection or compromise of the VM is the first and most important thing to do.

Second, Little says, don't forget basic security principles to secure the guest and console operating systems. "The larger the VM environment grows, which can be dynamic and rapid, the harder it is to ensure that all the guest OSes and VM consoles are being properly hardened, patched, and so forth," Little says. "It's not uncommon to see people focus more on one or the other, but both should be treated with the same level of security practice."

Third, Little says to take time to develop a good VM architecture. He says people often don't put enough thought into good VM architecture design. "They treat it as this great, highly configurable, modular world that can be reset, rebuilt, and moved, but the problem . . . is when you do things like that it often breaks core security principles," Little says. "You lose basic best-practice strategies and lose your defense-in-depth strategies."

Little says that the monitoring architecture is related to good VM design. "Where and how to place IDS/IPS monitoring solutions is extremely important. Placing them backside of a vSwitch limits their ability to see inter-VM communication, which can be critical if you don't set up your VM machines in a secure, well-thought-out fashion," he says.

"Thought needs to be placed into how the VM environment will be set up, operated, and monitored, and oftentimes people don't think about the monitoring aspect in the design phase, but after it's been operational, which leads to weak or risky VM security models," Little says. P

Resources For Securing Virtual Machines

Securing virtual machines can be a daunting prospect without the proper resources. There are a number of online resources to help you isolate and protect VM assets in your cardholder data environment.

The Center for Internet Security, known for its many excellent hardening benchmark checklists, offers both VMware and Xen benchmark checklists at www.cisecurity.org/en-us/?route=downloads.multiform.

VMware has a number of references for security hardening, roles and permissions, and DMZ virtualization at www.vmware.com/technical-resources/security/overview.html.

Xen virtual machine users can find guidelines for securing Xen at wiki.xensource.com/xenwiki/SecuringXen.

CASE STUDY

More Efficient With Email

Hosted Service Provider Offers Legal Firm What It Needs

by Sue Hildreth

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Businesses have always had to scramble to reopen and get back to business when disaster strikes. The amount of downtime that customers consider to be acceptable has shrunk significantly, and today's Internet-driven markets expect an organization to be sending emails and answering the phone within hours of a major natural disaster. That is a feat that is hard to pull off when the mail servers are in the epicenter of the disaster.

When Hurricane Katrina hit the Gulf Coast in 2005, it temporarily brought down the email at Breazeale, Sachse & Wilson, a Louisiana-based corporate law firm with 160 employees and three offices, including one in New Orleans. Naturally, email was the primary way the legal staff exchanged documents and information, and it was nearly impossible for them to conduct business without email service and the many digital documents they needed for active cases.

Left Behind

When Katrina came through, causing massive damage to New Orleans, the staff there evacuated, along with quite a few of the firm's clients. They also had to leave behind the email servers and backup tapes. When the law firm needed to get the email back up and running elsewhere, it had to go back to New Orleans with an armed guard to retrieve everything from flooded downtown New Orleans.

It took three days for the law firm to get completely back online with all up-to-date emails and files. For Breazeale, Sachse & Wilson, that three days was far too long for comfort.

"When talking about a law firm with 50 or 60 lawyers and 160 total end users, there are many time-sensitive deals and contracts, and email is usually how all of those important documents and contracts are sent. Any interruption to the email can cause a lot of problems," says Luke Corley, IT manager at Breazeale, Sachse & Wilson.

To avoid a repeat of the Katrina experience, Corley began looking at other options for backing up and restoring email. At about the same time as he was looking into disaster recovery options, Breazeale, Sachse & Wilson suffered another email outage—albeit a much shorter one—when the antispam appliance that filters incoming emails decided to go on strike for several hours, holding hostage all of the incoming email.

"For whatever reason, the spam appliance was holding onto the mail after it was received, for up to six hours," Corley says. "People were yelling that they needed an email to close a deal or whatever, but since the email was technically received by our side, there wasn't anything we could really do except wait."

Finding The One-Stop Shop

The law firm decided that the best option would be to get out of the business of managing email altogether and outsource it to a service provider. Corley went looking for an alternative to the firm's current email appliance.

After looking at a few options, Corley selected Mimecast's Unified Email Management for Exchange (www.mimecast.com) to provide email management services, which includes automatic backup of email and attachments; security and policy enforcement; and discovery, archiving, and business continuity features.

The three law offices now all connect to Mimecast, and email is stored offsite at the Mimecast data center. IT can manage the email settings from a single administrative console and can opt to expand or reduce the amount of storage the law firm is using. End users can access their email via Outlook, BlackBerry phones, or a Web client, and they can drag-and-drop email between Outlook and the Mimecast archive, so accessing archived email is simple and fast.

Antispam and antivirus scanning is handled on the Mimecast side so that malware never gets to the clients' locations—a useful feature for companies that are covered by retention requirements and have to grapple with whether and how long to retain spam or other unwanted emails. The service satisfied Corley's desire to have a one-stop shop for email management.

"Now our email will maintain its presence regardless of what happens at our location. Our office could blow away, but our email will still be up, and our clients can still get in touch with us," Corley says. "We can log in to a Web portal and can continue to service our clients. We don't have to shuffle tapes around. We just pay a flat fee and it's done, like data insurance."

Outsourcing Makes E-Discovery Faster

Beyond the basic requirements for storage, antispam, and virus protection, the Mimecast service also met Corley's needs for document retention and storage. Breazeale, Sachse & Wilson handles a range of corporate legal affairs, including commercial litigation, finance and labor law, and real estate and tax issues, so it has to have a reliable email retention and archival plan to be able to provide legally required documents for any discovery request. A failure to do so could cause the company to be hit with heavy fines. In addition to the difficulty of selecting, implementing, and managing an email archival system, the basic task of recovering documents is time-consuming.

Corley estimates that the average amount of time it takes him to do a legal discovery of email using the older, on-premises email system is four to five hours for a simple discovery request. It requires fetching the backup tapes, mounting them, conducting the searches, and then confirming the emails are the correct ones before restoring them.

With a hosted system such as Mimecast, however, Corley says searches take just a few seconds because the archive is always online and available for searching. "You just pull up the date range you want and do a full index search," he says.

The law firm is also beginning a migration to Exchange 10, which Corley says will allow the firm to access some of the higher-level features that Mimecast offers, including more specialized e-discovery tools and automated legal holds that can be placed on emails to prevent their deletion, plus integration of voice messages with email.

More Time For Other Projects

In addition to the move to Exchange 10, Corley is also working on rolling out new workstations to employees. It is extra work he would have had trouble making time for without the Mimecast email service.

He credits outsourcing of the email system with freeing up his time enough to get all of the other projects finished faster. "This year I'm involved in email conversion [and] we're rolling out new workstations. I've got nine months' worth of straight work," he says.

"Before Mimecast, I had to manage it all, so I was constantly having to check from the house to make sure there were no delays in the antispam filter [and] see if everything was up. At night I'd be awake worrying about what was going on," Corley says. Now, he says, he doesn't have to worry as much because he has an extra security blanket. P

Mimecast Unified Email Management For Exchange

A hosted email service that provides a single solution for email security, spam protection, storage, and mailbox management. The service includes email continuity to ensure email uptime during an outage; security against spam, viruses, phishing attempts, and data leaks; archiving of emails for up to 10 years; and integration with Outlook.

"Now our email will maintain its presence regardless of what happens at our location. Our office could blow away, but our email will still be up, and our clients can still get in touch with us," says Luke Corley, IT manager at Breazeale, Sachse & Wilson.

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News

Physics Professors Create First-Ever Antilaser

Scientists at Yale University have constructed the first antilaser. The invention comes more than 50 years after the first conventional lasers. Through the efforts of Yale Physics Professor A. Douglas Stone and his colleagues, the team built what is called a CPA, or Coherent Perfect Absorber.

Hui Cao, professor of applied physics and physics at Stanford University, and her group collaborated with Stone to direct two frequency-specific laser beams at a silicon wafer to create a "loss medium," basically canceling out each laser's light beams. The light rays are eventually absorbed in the wafer and turned into heat, but other materials can scatter the light to produce near perfect absorption. The implications of these results point toward the future use of antilasers to function in devices such as the first optical computers or optical switches, modulators, and detectors in semiconductor integrated optical circuits.

"Our work might be used for the development of optical switches, modulators, logic gates, and transistors for silicon photonics," Cao says. "But more work needs to be done before we make any definite claims."

In the radiology field, CPAs might be applied to electromagnetic radiation. Specifically, radiation could target a human tissue for the purpose of therapy or imaging, according to Stone.

The Future Is Bright

The first CPA is 1cm across, but forthcoming models could measure at six microns, based on current computer simulations. As with any experimental phase, the CPA has its own limitations, though. For instance, the CPA is able to absorb 99.4% of incoming light. Ideally, more sophisticated CPAs will absorb 99.999%. The team also anticipates that the

CPA will eventually be able to absorb visible light and infrared frequencies.

"We expect the coherent perfect absorption can be realized in various complex systems, and hope it will evolve rapidly. . . . What we have demonstrated is a new concept that opens doors to many applications, some of them we are not familiar with," Cao says.

In terms of continued breakthroughs in multiple fields of study, Cao says greater exposure of the CPA discovery will foster more research and practical application. "We hope our paper . . . reach[es] a wide range of readers who will start thinking about the application of this new concept to the technologies they are currently developing," Cao says.

by Joanna Clay

SERVICES | PRODUCT SPOTLIGHT

Equipment Recycling & Disposal

AnythingIT

Description

With a suite of IT asset management services, including testing, auditing, and DoD data destruction and processing, AnythingIT helps government and commercial clients deal with aging technology and the regulatory compliance issues involved with managing it. AnythingIT's consultants will perform an IT asset review and analysis that uses a fair-market evaluation of your current technology.

- Recycle Tomorrow program saves costs in the remarketing and recycling process
- Can process IT assets at multiple ISO 14001-certified facilities globally
- Offers custom-designed channel and non-channel programs for OEMs and integrators servicing both government and commercial clients
- Knowledgeable in disposal processing, data mining, and warehouse systems for IT assets
- Unparalleled past performance servicing public-sector clients
- Innovative trade-in and asset recovery programs

Best For: Government and commercial enterprise organizations that need help making cost-effective business decisions for IT storage, disposal, resale, donations, and recycling.

Apto Solutions

Apto Solutions can help you monetize downsized or liquidated assets, and the company can handle the sales process for you, including market research, valuation, collections, and shipment.

- Features compliance programs for environmental, export, data security, and electronic tracking issues
- Logistics management for recovery and consolidation to the Apto warehouse
- Inventory Management System lets you track the trade process
- Maximize return on investment through an extensive contact network and market knowledge

Best For: Companies looking for a recovery service with experience, credentials, and expertise in technology remarketing.

Data Media Source

Data Media Source buys used tape media, including LTO, AIT, and SDLT, and provides free data destruction, taking care of all the logistic and security concerns you have. Sold media can be turned into cash or exchanged for brand-new media.

- Provides value of the tape and details costs involved
- Tape is shipped with complete chain-of-custody documentation
- Tape is inspected and sorted—you'll be notified of completion
- Once inspection is complete, paperwork is processed for payment

Best For: Companies in the process of removing or renewing their tape libraries.

Paragon Green

Description

Classic Computer Recovery has joined forces with 5R Processors to create Paragon Green. Paragon Green can refurbish, reuse, and recycle all types of electronics, including PCs, copiers, and televisions, because of the company's zero-waste policy. All end-of-life electronics are recycled and processed within the United States.

- Equipment is refurbished with working components
- For equipment that can't be resold, the unit is broken down into separate components
- Hardware that's too old for resale is recycled for raw materials
- Data is removed using the DoD's standards

Best For: Enterprises that have a variety of electronics to remove and recycle.

Reclamere

Reclamere's experienced team works with you to develop a data security plan tailored to meet your data destruction, data recovery, and IT asset management needs. Reclamere's experts can also help you execute your legal responsibilities for each phase of the IT equipment life cycle, which helps protect your company, employees, and clients from data breaches.

- Certified data destruction
- IT asset management for safe and secure preparation of electronic equipment
- IT audit and assessment to evaluate a company's risk level
- E-discovery and litigation support to recover information from hard drives for legal procedures

Best For: Enterprises most concerned about the security of outdated IT assets.

Recycle Your Media

Recycle Your Media has a proprietary system for fully erasing data tape media cartridges. The process erases each tape from pin to hub with a magnetic degauss power that's 10 times stronger than DoD degaussing standards. Recycle Your Media offers premium pricing paid now on the following media formats: DLT VS160, 3592, T10000 T10K, LTO-4, AIT-4, AIT-5, VXA X-23 tapes, all brands.

- 100% full-length, pin-to-hub erasure for total security
- Recycle Your Media pays for tapes—no more costly shredding services
- Full chain of custody
- Volume serial reports
- Certificate of data destruction
- Drive read/write data test and reset to blank tape, ready-to-write status
- Final quality assurance scan step to confirm full erasure, reset, and data integrity

Best For: IT staff who want a green alternative for recycling tape media that's out of its retention period and those who need full data erasure and reporting on every tape recycled.

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Rod Scher

Services

DMD Systems Recovery

DMD Systems Recovery works to minimize your risk and maximize your payback, so you'll get a solid return on investment without worrying about the possibilities of regulatory fines, bad publicity, or litigation from data theft on hard drives that weren't properly sanitized. DMD Systems Recovery offers data deinstallation, packaging, logistics, data destruction, recycling, and remarketing.

- Removal and packaging services to preserve value
- Increased ROI through direct purchase or profit sharing
- DoD 5220.22-M-compliant data wipe and NAID-compliant destruction
- Reduced risk through certificates of destruction and compliance and transfer of ownership

Best For: Data centers, call centers, and companies with large centralized operations.

Contact: (877) 777-0651 | www.dmdsystems.com

Frontier Computer

Frontier Computer has been in the business of helping companies plan, build, and maintain their IT infrastructures since 1976. The company buys used computer equipment, excess IT hardware, and enterprise-level IT equipment, including servers, workstations, peripherals, storage arrays, and networking tools.

- Buys excess new or used enterprise equipment
- Offers environmentally friendly end-of-life services for obsolete IT assets
- Works with Cisco, HP, IBM, and Sun hardware
- Global presence helps Frontier respond with speed to customer demands

Best For: Enterprises that want to sell their equipment to a company with decades of experience with IT hardware.

Intechra

Intechra focuses on data security and protecting clients from liability by leveraging technology, processes, and customized solutions into the right mix of end-of-life asset management and disposal services. Intechra's IT asset disposition offers waste-free, worry-free service, covering all steps of the process, including logistics, data security, and the demanufacturing and recycling of materials.

- Ultimate data security protection
- Environmentally compliant disposal
- Comprehensive remarketing, redeployment, and donation strategies
- Full indemnity against risk

Best For: Enterprise or global organizations needing a secure, compliant global IT asset disposal strategy.

Secure MDE

Secure MDE offers a guaranteed solution for end-of-life data. The Secure Shark high-capacity destruction service shreds media your company no longer needs—media that's full of sensitive data, takes up space, and causes you anxiety. Secure Shark can handle jobs of any size, anywhere in the country. Best of all, the process safeguards the environment by recycling 100% of all resultant material.

- Cost-effective: Eliminates labor costs of wiping, disassembling, or degaussing
- Secure: Onsite personnel can monitor the destruction process and verify the results
- Convenient: All destruction takes place at your site; Secure MDE can handle quantities of any size
- Environmentally friendly: Exceeds EPA, OSHA, state, and local environmental laws

Best For: Organizations of any size that want to responsibly, securely dispose of end-of-life media.

Contact: (888) 312-2333 | www.SecureMDE.com

WeBuyUsedTape.net

WeBuyUsedTape.net pays top dollar for your new and used tapes. WeBuyUsedTape has been in the business of purchasing new, used, excess, and surplus magnetic media for more than 35 years. It uses regulation-approved, secure data eradication processes and environmentally friendly disposal programs to give organizations a safe and economic incentive for recycling used media. No-obligation, confidential quotes on your tape media are available at any time.

- Simple process: Submit your list of media; receive a confidential, no-obligation offer within 24 hours; and ship your media to us.
- Processes meet HIPAA, Gramm-Leach-Bliley, Sarbanes-Oxley, and other regulation requirements
- Data Destruction Certificates document your transaction and provide proof of complying with recycling and data eradication processes

Best For: Enterprises needing a secure way to dispose of new, used, excess, and surplus magnetic media.

Contact: (800) 821-1782 | www.WeBuyUsedTape.net

World Data Products

World Data Products has partnered with Shred-It to provide a drive- and media-shredding service. Using Shred-It's specially engineered, state-of-the-art shredding machines, World Data Products can pulverize hard drives and tape media into tiny particles, making it impossible for others to restore the data and safeguarding your organization against vulnerabilities from stolen payroll, personnel, and customer information.

- Services available for hard drives, backup magnetic tapes, floppy and Zip diskettes, and optical media
- Drives and media can be destroyed onsite or at one of Shred-It's facilities
- Drives are recycled or disposed of per EPA standards and local and state laws
- Certificate of destruction verifies the job has been securely completed

Best For: Enterprises in need of secure destruction of sensitive company and customer data on hard drives and other media.

News

Report Shows SaaS Potential Could Be Limited

SaaS (software as a service) isn't exactly the new kid on the block, having been around since the late 1990s. "SaaS has matured significantly since those early days," says Liz Herbert, principal analyst at Forrester Research. "Firms are now using SaaS much more broadly, across more categories of software and broader footprints within the enterprise."

But in Forrester's latest report, contrary to the prevailing opinion, the firm contends that SaaS will experience limited application in some software sectors and little to no adoption in many others.

Although Forrester considers SaaS capable of accounting for a quarter of global software spending, the remaining majority of software will remain unaffected in the long term. The most SaaS-resistant software applications include software for internal IT management and data management, legacy process applications, and vertical applications.

Operating systems and databases are two of the largest sectors in which SaaS will struggle to gain a foothold. "We are seeing some entrants," Herbert says, "but overall market adoption is fairly low in these categories." Herbert also reports that market share in these two areas will remain paltry until at least 2013.

Entrenched Business Models

Forrester cites security concerns and firmly entrenched business models, for instance the support fees for on-premises software, as major reasons some software will never take to the cloud.

According to Herbert, Forrester has found that security is the No. 1 reason firms are hesitant to move to SaaS. Security, Herbert says, includes a host of concerns, such as physical security, the location of data, chain of service delivery, and compliance and regulatory issues. Audits and third-party certifications are helping to shrink cloud's security holes, but the process is slow. Herbert also says that SaaS buyers have come to expect platforms with deep functionality and extensibility that can support unlimited unbreakable upgrades, and meeting those expectations is no easy task.

For successful SaaS providers, the key appears to be a limited portfolio. "Most leading software firms," Herbert says, "offer SaaS for only a subset of products or only a subset of functionality." Forrester's report also points out that even these successes are limited in scope: SaaS currently accounts for at least 50% of revenues for just 3% of the total software market.

by Andrew Leibman

SERVERS

HOW TO

Create A Server Disaster Recovery Plan

Make Sure Your SME Is Prepared For The Unexpected

by Sue Marquette Poremba

• • •

It doesn't take a natural disaster to take down a server network. An employee unwittingly downloading a piece of malware can do significant damage. A power outage might occur. Or hardware could go bad. So, while there are dozens of reasons for a server disaster, there's only one reason why every company needs to consider creating a server disaster recovery plan—to prevent potential loss of business. For every precious minute or hour the server is down, there is lost revenue.

"Disaster mitigation requires that businesses plan for various types of catastrophes such that when weighed against budgetary constraints, their responses maintain appropriate degrees of availability, integrity, and confidentiality of their data," says Brian Blum, president of Maverick Solutions IT (www.mavericksolutions.biz). "A small local florist, for example, would have different requirements during a regional blackout than would a county police department within the affected area. Many a small business would be able to just shutter its doors and windows and wait out the night, whereas law enforcement would require near-100% data and infrastructure availability."

Key Points

- Disaster mitigation requires that enterprises plan for various types of catastrophes.
- Know what data your SME has and how critical it is to business, and then make sure you figure out where it is stored.
- You can pay for a plan or you can pay for recovery.

What Should Your Plan Include?

Blum says there are three main scenarios to consider in regard to a server failure.

In the event of a power failure, at minimum, businesses will want UPSes on their servers to permit graceful shutdowns. In areas prone to frequent brownouts, surges, or even brief blackouts, a UPS may also permit a business to ride out waves in power without any effect on their servers. For businesses requiring more uptime, even during an extended power failure, backup generators may be employed.

To lower the possibility of Internet connectivity failure, SMEs might consider hosting their email and Web servers offsite in a dedicated server farm. This is generally the safest way to ensure availability, as these hosting companies typically have redundancy and fault tolerance built in and maintain spare parts and trained technicians on hand 24/7.

In the event of server failure, independent disks can be used to mitigate a bad hard drive. A second server can be used to mitigate primary server failure. Offsite backup, either online or by storing tapes offsite, can mitigate data loss in the event of fire or flood.

Implement Your Plan

Knowing why to have a server disaster plan and the minimum protections in place, the next step is to actually put a plan in place. To do that, Jeff Miller, IT consultant with Sperco (www.sperco.com), says you'll need to know where the stored data is.

"Most SMBs have no idea other than 'I click on this shortcut and my database appears' or 'I click on my U:\ drive and all my stuff is there,'" says Miller. "SMBs need to identify EVERY business critical spreadsheet, database, file, [and] program and make sure it's getting automatically copied to an offsite location. Similarly, they need to test to make sure what they think is being copied is actually being copied, and after implementation of the new solution, that the data is actually usable and correct."

Once you know where it is, it's good to know what you have stored. J. Tyler Wayland, business development manager with InnerTag (www.innertag.com), says data center managers need to ask a few questions about what is in their server environment: What hardware do I have? What is the hardware's age? How is my data being backed up? How often? When was the backup last tested? Once that information is determined, Wayland recommends evaluating the following details.

Risk analysis. What are all of the potential risks that could affect uptime? Anything from a virus to a flood needs to be considered.

Determine how to mitigate each risk that is uncovered. Where is the safest place for physical location of the server to mitigate damages?

What is an acceptable amount of downtime? In the event that something were to happen, how long can the business afford to be down? The acceptable downtime will determine the backup solution that is best for the business.

Documentation. Map out a step-by-step process to get the business back up and running in the event of a disaster. In disaster situations it is easier to follow preset instructions than it is to go on the fly and potentially forget something in a panic state.

Disaster Planning For SMEs

Two of the reasons why SMEs balk at developing a disaster plan are a small staff that doesn't include an IT person (or the IT person is overworked as it is) and a small budget. Addressing the first issue, there are a number of tools and products available on the market now that can handle much of the server backup issues.

The cloud is an increasingly popular, and often inexpensive, method to back up data. The information sits on the server, but it is also regularly backed up to a cloud hosting service, says Miller. If there is a disaster that destroys the server, files can be retrieved through any computer.

SMEs should consider investing in an automated program that can be scheduled to back up files to the cloud or other offsite server on a regular, predefined basis, says Joseph Schumacher, owner of 1026north (www.1026north.com). This will eliminate the need for employees to perform the backup and cuts down on the risk that the information isn't backed up properly—or at all.

"An optional tool for many businesses would be the use of encryption on their backup," says Schumacher. "Depending on the business's lead or technical staff, the cost for encryption can range in price, but there are many great products that are open source here as well. I would prefer encrypting locally then uploading or saving the files in an encrypted state."

As for the cost, as Ben Carmitchel, president of ESS Data Recovery (www.datarecovery.com), says, you can pay up front or you can pay afterward. The costs of setting up a disaster recovery plan will vary, depending on the equipment, tools, and vendors used. Costs can be minimal for backing up data in the cloud or it can cost thousands of dollars for software and equipment for more complicated processes.

However, data recovery, Carmitchel says emphatically, is not cheap. "The costs can range from $2,000 to $50,000," he says, and this depends on a number of factors, such as whether it can be done remotely and how long it will take.

A server disaster plan, however, is only as good as the people and the equipment, says Schumacher. "Depending on the planning, and again lead person, there can be many pitfalls too. If the company is using encryption on files, then protecting the encryption key is vital to the business recovery. The encryption phrase needs to be protected through more than one person knowing the phrase in case disaster should happen to this person."

But in the long run? "The benefit is that your business is protected in the event of a disaster," says Wayland. "The wrong solution or lack of proper planning can put you out of business." P

TOP TIPS

- Take the time to sit down and go over the "what ifs" and then practice the recovery solution.
- Make a binder. Put everything relevant to disaster recovery in it. Include step-by-step directions and/or screen shots for how to gain access to your offsite data, contact information, who key decision-making personnel are, and what constitutes a disaster, at a minimum.
- Schedule a consultation with a qualified disaster planner to discuss budgets and requirements and the options and costs to meet them.
- Communicate with key employees in areas of saving files, how to invoke a recovery act, and how employees should act depending on type of disaster.

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Develop Apps For Mobile Devices

Sifting Through A Myriad Of Choices

by Chris A. MacKinnon

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So you need an application developed for mobile devices, but you're not sure where to turn in the rapidly growing arena of mobile applications. Is it better to turn to commercial applications, or should you develop the application in-house? In what cases would either choice work best? And what should you do if you don't have an in-house development team but feel a custom application is best? The good news is you're not alone in your pondering. There's a lot of talk right now about the best development solution for mobile device applications, so here's some advice to help you make pertinent decisions.

The Hype

Dov Cohn, vice president of products and marketing with Appia (www.appia.com), says mobile phones now have the ability to be an always-on, always-there extension of the corporate network. He says for this reason, there is indeed lots of talk about whether enterprises should develop applications in-house or just find commercial applications that somewhat suit their needs. "Many enterprise application vendors are extending their solutions to embrace phones—most often phones on iOS and Android—as another supported platform, along with the browser and OS platforms that they build," he says.

Cohn says for every corporate application, IT managers now need to determine if there is a business need to provide mobile access to that application and if so, what are the use cases and functionality required.

According to Dan Ortega, senior director of product marketing at Sybase (www.sybase.com), the in-house or commercial question depends on the focus of the enterprise. "Most applications are designed to support a workflow, and most workflows are generic (for example, travel approvals)," Ortega explains. "So what is ideally needed is a semi-generic application that can be fine-tuned to the peculiarities of the specific company. What we find works well is an application that is approximately 80% ready, and the remaining 20% is customized to the specifics of the workflow or process, which will vary by industry."

In-House, Out-Of-House

Ortega says it is typically better to build an application in-house when you need something that is completely unique to a specific company. But he says this type of scenario is pretty unusual.

Appia's Cohn says it is typically better to build an application in-house when the functionality needed in the mobile application integrates with or supports proprietary or in-house applications that require a great deal of customization. "For example, if you have developed a highly customized sales configuration tool, you are not going to be able to find a commercial application to support it."

On the other hand, Cohn says it's better to go with a commercial application when you need to support already-deployed enterprise solutions. "Many CRM and ERP solutions now have out-of-the-box mobile applications that seamlessly plug in and require no custom development," he says. "Within seconds, a user can be accessing corporate systems through their phone with the same functionality they are used to on their desktop or laptop."

And Sybase's Ortega says it's better to go with a commercial application when it supports a generic workflow that is more pure-play transactional rather than value-add. "However, keep in mind that a well-designed commercial application can also be customized to a specific company's requirements," he says.

No Team?

If you feel a custom application is best, what should you do if you don't have an in-house development team? According to Ortega, the answer is to outsource. "Nearly every major application or technology vendor provides professional services support, plus there is a vast ecosystem of custom developers out there who can help you." He says it's important to try to find someone who understands your vertical and the nuances of the process workflows that are associated with it; it's also important to find someone who has a firm grasp on how this new technology will interact with your existing IT systems.

According to TY Lau, senior analyst at Canalys (www.canalys.com), for companies with little or no in-house application development capabilities, they can approach companies such as system integrators, resellers, or even software vendors that have the expertise of customizing and building solutions from scratch. Lau says some handset vendors have a wide range of partners and are able to recommend suitable candidates in consideration of the company's requirements and needs.

In addition, Lau says there is an increasing trend that commercial solutions are made modular. "There is also the possibility of adapting commercial solutions for specific needs, which usually involves rewriting applications," she says. "Even though this will bring about greater customization, it also creates the danger of producing high maintenance costs that might be comparable to that of building the entire application in-house."

Whatever way you look at it, Lau says she advises companies that are in the stages of evaluating in-house applications or commercial solutions to look at all possible solutions with detailed alternatives and consequences so that your company's stakeholders can weigh the differences. In Ortega's opinion, deployment of mobile technology into the enterprise is not optional—it's mandatory. If done correctly, he says, it can take not only your enterprise but also your entire ecosystem to the next level. P

Key Points

- When there is need for a corporate application, IT managers now have to decide if mobile access is necessary, as well. If so, they must determine the use cases and the functionalities required.
- It is typically better to build an application in-house when the requirement is completely unique to a company and also when the required functionality integrates with or supports proprietary or in-house applications that require customization.
- Go with a commercial application when you need to support already-deployed enterprise solutions, and when it supports a generic workflow that is more pure-play transactional rather than value-add.

> "Many CRM and ERP solutions now have out-of-the-box mobile applications that seamlessly plug in and require no custom development."
>
> *-Appia's Dov Cohn*

Decision Factors

It has always been difficult for many companies to decide if they should be buying off-the-shelf solutions or building the solutions themselves. According to TY Lau, senior analyst at Canalys (www.canalys.com), some of the typical decision factors are cost, time to market, employee skill sets, and the strategic value of the solution.

Cost. Besides the up-front costs, companies would need to look at the total costs of the software life cycle because a high percentage of costs are typically incurred after the implementation of the solution. If in-house developers require a high cost for maintaining the solution, then usually companies will swing toward purchasing a commercial solution.

Time to market. If time to market is a critical issue, companies will usually go for a commercial solution, as building a solution takes more time and effort.

Employee skill sets. Do companies have the in-house capabilities of building the app and maintaining it?

Strategic value of the solution. Will this solution create a huge competitive advantage for the company in order to justify the costs of developing in-house?

Giada's A50 Mini PC

NEW PRODUCT

by Kris Glaser Brambila

Big Performance In A Small Form Factor

Mini PCs are the perfect computing companion for SMBs. Although their small form factor saves space, their internal hardware packs enough punch to make them ideal for business, multimedia, and digital signage uses.

Giada's A50 Mini PC is no exception. The A50 sports a dual-core E-350 (1.6GHz) processor and can support up to 4GB of DDR3-1066 in a single SO-DIMM slot. Video graphics are backed by ATI's Radeon HD 6310 GPU, which supports native full HD 1080p playback and DX11, and there's plenty of storage space with a 1TB maximum 2.5-inch hard drive.

Connectivity for the A50 includes Gigabit LAN, 802.11n wireless, and optional Bluetooth, so your employees can easily connect to the network without any additional hardware.

Despite its small size and weight of 1.25 pounds, the A50 has plenty of connections: four USB 2.0 ports and one USB 3.0 port; RJ45, HDMI, and VGA ports; and a card reader that supports SD, MMC, MS, and MS Pro memory cards. It also comes with a remote control.

Giada A50 Mini PC
Features AMD's Fusion processor, ATI Radeon HD graphics, and up to 4GB of memory and 1TB of storage space.

In addition to space savings, the A50 is also energy efficient because it only draws 30W during operation. And while running, the A50 produces no more than 26dB, giving it nearly silent operation. As an added bonus, it's available in both black and white finishes.

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What To Look For In A Dealer

When Buying Used Or Refurbished Gear, Using A Reputable Dealer Is Vital

by Dan Heilman

• • •

In the retail world, a popular advertising tag line is "Why buy new when slightly used will do?" That philosophy also holds true in data centers and other enterprise-level environments: According to a recent study by IDC, more than 75% of Fortune 500 companies buy used equipment, and a lot of that is data center equipment. But while buying refurbished equipment can result in significant cost savings, there are factors to be aware of before you go shopping for used gear, and chief among them is the vendor from whom you will be buying your equipment.

Do your homework. Make sure the company providing the used equipment has the means and the expertise to give you equipment that's either good as new or as close to it as possible.

"The key is to deal with someone who has the expertise to properly refurbish a piece of equipment," says Bob Houghton, president and chief executive officer of Redemtech (www.redemtech.com). "A piece of equipment coming out of one environment is rarely ready to go directly into another environment. There needs to be cleaning and sanitizing, including in many cases reconfiguring for the buyer."

Or, put more succinctly: "You don't want someone that just wipes the hard drive and sticks a new label on," says Ed Stukane, chief marketing officer at PlanITROI (www.planitroi.com).

To really cover your due diligence tracks, Houghton recommends running a Dun & Bradstreet credit report on the dealer before you buy any substantial amount of used equipment. "Make sure they've got the financial strength on the warranties they offer," he says. "If you're spending $100,000 on used equipment, it's a worthwhile, minor expense. There are a lot of dealers who can't meet their obligations to buyers and just fade away."

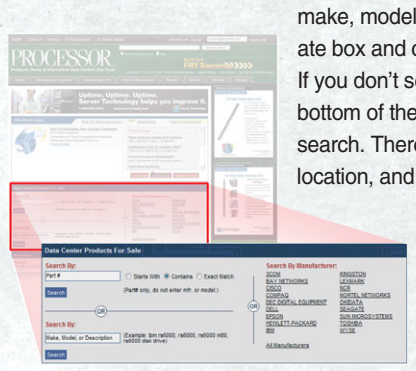
Get references. As you research who's behind the equipment you're buying and how they're backing it up, Stukane also recommends getting in touch with previous clients. "Obviously, if there've been problems or complaints, that's something you need to take into account," he says. "If there's no warranty offered with the equipment, or if there's just a shortage of information about the dealer, those are big red flags. Find out what their quality process is."

Follow licensing requirements. Fortunately, the refurbishment business has progressed to a state where there isn't a lot of equipment that can't be found used and at an OEM level of quality—or sometimes better. But, cautions Houghton, there are OEMs that make it impossible, by virtue of their software licensing policies, to get a good deal on refurbished equipment. A lot of resellers will try to sneak past these licensing policies, which could come back to bite you in the end, so it's important to find a reputable seller who stays to the right side of these requirements. "Make sure the equipment is fully licensed with the software it needs to operate," he says. P

Find Used & Refurbished Equipment For Sale

Once you've made the decision to purchase used or refurbished equipment, finding the equipment you need is easy with *Processor*'s online *Data Center Products For Sale Database*.

From *Processor*'s home page (www.processor.com), you can search for a specific part number, make, model, or description. Enter the information in the appropriate box and click Search. You'll see a list of available equipment. If you don't see the particular piece you're looking for, scroll to the bottom of the search results page to conduct a more detailed search. There, you can search by part number, model, price, location, and more.



Don't know the specific part number or model? Use the drill-down search on the *Processor* home page to view results from specific manufacturers. Simply click the manufacturer name, and you'll see a list of all equipment listings from that manufacturer.

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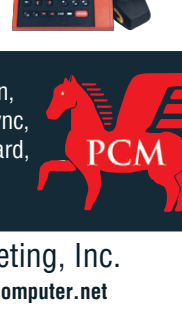

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Description

Global Knowledge is the worldwide leader in IT and business skills training. The company delivers courses via training centers, private facilities, and the Internet, letting customers choose when, where, and how they want to receive training programs and learning services. Global Knowledge specializes in high-quality, hands-on data center training courses that are delivered by accomplished cross-domain experts. Instructors are certified Cisco Systems and VMware Certified instructors with real-world experience. The company's broad-based data center curriculum includes VMware, Cisco, Sun, IBM, Red Hat, and Microsoft courses as well as other subjects.

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Best For: IT training for the individual or for the enterprise organization that requires skills development or certification.

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NetCom Information Technology, headquartered in New York, has training centers located in 18 states across the country and offers training solutions for more than 1,000 technical, application, and project management courses to Fortune 500 companies, businesses, government agencies, and individuals. NetCom's subject matter experts provide authorized hands-on education in the latest technologies from leading vendors, including (ISC)2, Adobe, Autodesk, Check Point, Cisco, Citrix, CIW, CompTIA, EC-Council, Microsoft, Novell, Oracle, PMI, and others. NetCom is an authorized testing center for Sylvan Prometric, VUE, and Certiport. The company is also a New York and New Jersey Workforce Training Provider and a licensed school registered with the New York State Education Department.

- Provides world-class training and certification preparation for the most in-demand computer technologies
- Offers authorized career training classes in Microsoft, Cisco, Adobe, PMI, Autodesk, Oracle, Novell, CompTIA, and more
- All courses and boot camps are hands-on, led by certified instructors using the latest equipment
- On average, NetCom instructors have 11 or more years of experience in the subjects they teach
- Curriculum options aimed at helping students become Web site developers, database administrators, computer programmers, graphic designers, security specialists, and project managers
- In the last decade, NetCom has delivered training to thousands of individuals and corporations

Best For: IT, security, and project management training for beginners and also for experienced staff looking to enhance their careers or enter a new market.

Training Center

TechSkills

Description

TechSkills is a nationally recognized leader in education delivery, specializing in skills and certification training for careers in information technology, healthcare services, and business. TechSkills' teaching methodology combines elements of traditional instructor-led education, the latest online learning tools, and extensive hands-on skill-building to create an effective and efficient learning process. Students control what they learn, when they learn, how they learn, and how rapidly they progress. Based in Austin, Texas, TechSkills operates more than 25 campuses in 16 states. TechSkills campuses are licensed in each state in which they operate, and select TechSkills campuses are nationally accredited by the Accrediting Council for Continuing Education & Training.

- Offers personalized programs that include morning, afternoon, evening, and weekend classes; online and on-campus study options; intensive small group "microlab" training sessions; and the latest online learning tools
- Course customization lets you skip what you already know and progress at your optimal speed
- Hundreds of hands-on lab activities to provide real-world experience
- Online access 24/7 lets you work through on-the-job scenarios in real time
- More than 90% of TechSkills' students pass their industry certification tests on their first attempt; if you don't pass your certification test the first time, TechSkills will pay for one retake for every successfully completed course
- Job placement assistance that includes personal coaching, help with résumés, and career development workshops
- Multiple programs, including Microsoft, Cisco, Oracle, and IT security certification

Best For: Students seeking certification in IT, technical, or business areas.

United Training

Actually a consortium of independently owned training centers, United Training concentrates on helping its members provide high-quality IT training from regional providers. Since 2000, the company has been delivering training nationally and developing strategic relationships with manufacturers and vendors of IT-related products and services. The company's goal is to provide quality training throughout North America on any IT training product, anywhere, and at any time. United Training offers in-class, private, and mobile classroom training options, and many members offer Web-based virtual classrooms. United Training regularly offers free Webcasts. In addition to the typical communication channels, members and students can comment on and communicate with the company via Twitter and Facebook.

- Microsoft Gold Certified Partner
- Courses offered in most states and in Canada
- Hundreds of courses offered in more than 50 technology areas, including Web development, programming, CRM, SQL Server, and Exchange
- Many courses offered for Cisco, MCSA/MCSE, and other certifications

Best For: IT staff seeking basic or advanced certification in multiple areas and employees needing introductory coursework in popular business applications.

DATA CENTER MANAGEMENT

Compiled by Rod Scher

Centers

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- 320 New Horizons locations worldwide, specializing in Microsoft and Cisco products and technology
- Cisco's North American Learning Partner of the Year for 2009-2010
- Microsoft's largest worldwide training partner
- Flexible training: mentored learning, instructor-led classroom, and online
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- More than 90 authorized Cisco locations in the United States
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Best For: New and experienced IT staff, including experienced Microsoft technical staff looking to cross over into Cisco routing, switching, and voice products, and those seeking additional ways to increase their marketability. Also ideal for help desk professionals looking to improve their skills and enhance their career options.

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Unitek Education

Unitek Education is the only IT training company in the world to have won Learning Partner of the Year awards from five different IT market leaders. Microsoft, Citrix, CompTIA, and Red Hat have all acknowledged the company's relentless drive for training excellence. Unitek is a learning partner for Microsoft, Citrix, Cisco, CompTIA, Red Hat, and NetApp and is the only company in the United States to have achieved the dual status of Microsoft Gold Partner for Learning Solutions and Cisco Learning Partner. The company provides multiple learning modalities, including the Smart classroom, which enables students to experience all the benefits of a live instructor-led class from the comfort of their homes or offices. Unitek's accelerated "boot camps" are aimed at teaching specific skills, tools, or technologies in a short period of time in a zero-distraction environment. Unitek is an authorized Prometric testing center, operating multiple exam sites in Fremont and Sacramento, Calif.

- Courses offered in multiple locations as well as online
- Onsite training available
- Courses offered for both end users and corporate administrators

Best For: IT staff seeking basic or advanced certification in any of several areas: Microsoft, Cisco, NetApp, Red Hat, Citrix, Linux, and others.

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Improve Training To Avoid Data Center Downtime

Prevent Failure Due To Human Error

by William Van Winkle

• • •

Listening to Julian Kudritzki, vice president of the Uptime Institute (www.uptimeinstitute.org), one can't help notice his tone of incredulity as he describes enterprise downtime blunders. Some stories are almost too absurd to believe. With his organization recently reporting that up to 70% of outages are caused by human error, though, there's no shortage of examples to prove the statistic.

For example, during the first half of 2010, as Kudritzki tells it, a major data center with a 24/7 performance objective and more than 40,000 square feet of raised flooring had a fire alarm. The staff recognized the source of the fire alarm (which was not an actual fire) and addressed it, but the fire alarm continued long enough that it automatically triggered an EPO (emergency power off) sequence.

"Although the staff had addressed the cause of the alarm, because they weren't trained in the abort procedures, they just sat there and watched the data center be taken down by the EPO. That's something you really can't teach in a classroom. Those are unique site characteristics," Kudritzki says.

When discussing data center downtime, a lot of attention falls on infrastructure. In reality, the staff hired to make the facility operational will probably be what brings it down. What can be done to reduce this risk?

Promote Procedures

Doing an infrastructure overhaul in order to improve fault tolerance can take years, and that's just for getting the necessary budget and approvals. Performing a management overhaul to accomplish the same task can be started within hours. Data center staff, and management in particular, should receive procedures training, and those who either resist training or fail to learn from it can be replaced.

Training workers on the extensive detailing of and adherence to procedures is essential in a data center setting. One common example, according to Kudritzki, is the trash generated during equipment installation and uninstallation. Equipment changes happen on a continual basis. The act of placing and removing servers is second nature to technicians—and therein lies the fatal flaw. Good habits in taking care of primary issues can blind workers to secondary issues. The hardware might be impeccably handled, but cardboard, loose wires, packing, and other materials often end up stuffed into cabinet bottoms when things get busy. This can foul up airflow, introduce debris into components, and cause failures. However, if a strict checklist was required for such operations, one of the last line items to sign off would be trash cleanup.

Another aspect of detailing processes is bringing multiple managers into play. "A change management process should require sign-off by different, knowledgeable parties before any work begins," says Wes Smith, director of data center operations at colocation provider Fibertown (www.fibertown.com). "When technicians need to initiate change, they submit a method of procedure for that change," he says. "The change request is reviewed by a second technician for procedural correctness to ensure that steps have not been overlooked which could impact operations. Once the work is completed, a third person inspects to ensure it was done correctly and per procedures."

Workflow repetition can become mind-numbing, so managers might do well to borrow the thinking of firefighters and submarine crews. These are "high-reliability" organizations. In these circles, says Kudritzki, catastrophe is a way of life. "They put together a culture to recognize risks, mitigate them, and work with a clear, defined structure. In an enterprise, you just replace the word 'failure' for 'catastrophe.' Sure, maybe you've done an operation 100 times before, and now you'll do it one more time, but each time it needs to be treated like a significant act."

Spread The Specialization

In mandating an internal culture that insists on strict procedures and multi-manager project checking, another problem will be minimized: reliance on a single person for operations. According to the Uptime Institute's Kudritzki, many data centers have one or two specialists who have been with the company for decades and know every facet of every machine and how to respond to them when problems arise—so-called "site wisdom." Although such specialists are valuable, over-reliance on them can be crippling. Consider the aforementioned fire alarm shutdown. An absent specialist knew the EPO override procedure, but no one else did because there wasn't a procedure-driven culture in place.

Building this knowledge into procedures and processes and mandating that employees be trained on critical aspects of it spreads this site knowledge and enhances the general safety of the organization. This knowledge spread also extends to contractors.

"Never assume the contractors you have working for you understand your operational procedures," cautions Fibertown's Smith. "Implement an orientation program for contractors to illustrate how you expect the work to be performed and how to communicate regarding job expectations and milestones."

Over-The-Shoulder Training

Gaining training on various data center equipment can be a costly proposition. Many businesses justify these costs as being far preferable to ignorance-induced downtime. However, one option is to skip the classroom setting and have a manager shadow the vendor's maintenance worker.

"Spending an hour with your generator maintenance rep can reveal a wealth of information, not only for basic equipment operation, but for operational pitfalls discovered and remediated by the service personnel," says Smith. "Dedicating an employee to follow and even help maintenance personnel can provide the benefit of one-on-one training, which sometimes rivals the formal training provided by manufacturers."

The data center employee can organize and distribute this new knowledge as part of ongoing site training and update organization procedures accordingly. Having this level of understanding about site equipment and how it interfaces with applications will enhance processes and procedures. Apart from avoiding downtime, this gained knowledge channeled into training will also help enterprises deliver on their SLA guarantees and improve customer service. P

Key Points

- The Uptime Institute reports that up to 70% of data center outages are caused by human error. These outages can be mitigated through improved training.
- Cultivate a culture of procedures and processes. This will reduce having equipment knowledge rest with too few specialists and help make contractors more safe within the data center.
- Rather than pay for additional equipment training, have a manager show a vendor maintenance worker and then spread the knowledge gained throughout the organization.

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2009 Stats On North American Uptime Institute Members

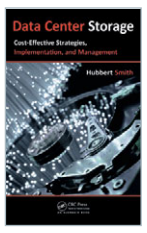
What companies have "abnormal" incidents? Nearly all of them, even the biggest. These Uptime Institute statistics show that even big infrastructure and seven-figure budgets may result in few hardware issues, but plenty of failures—most caused by management—remain.

- Average computer room area: **45,000 ft²**
- Average planned heat density: **65W/ft²**
- Average uninterruptible power systems capacity: **3,900kW**
- Average engine generator plant capacity: **6,300kW**
- Average annual site infrastructure operating budget: **$2.8 million**
- Average annual site infrastructure capital budget: **$2 million**
- FLASH Report warnings on manufacturer product problems per year: **22**
- Total Abnormal Incident Reports submitted: **329**

Source: Uptime Institute

BOOK REVIEW

More Efficient Storage



Data Center Storage: Cost-Effective Strategies, Implementation, And Management

Author: Hubbert Smith
Publisher: CRC Press
Price: $79.95
Format: Hardcover; 368 pages

by Kurt Marko

• • •

Businesses have a voracious appetite for storage. This leaves IT managers in an unenviable predicament: Total storage capacity is doubling every three or four years, but managers are facing tight budgets, frozen hiring, and overcrowded data centers. With storage, there's usually plenty of inefficiency in the highly distributed systems still prevalent in many enterprises, so throwing more spindles at the problem is unwise and often infeasible.

In the book "Data Center Storage: Cost-Effective Strategies, Implementation, and Management," Hubbert Smith unearths the likely locations for such inefficiencies while revealing how best to add useful capacity, improve service levels, and increase performance without breaking the bank.

Storage Planning & Operations

The book provides a broad overview of key technologies, along with important areas of storage planning and operations, covering a range of topics from disk drive performance characteristics to cloud storage services. It's not a handbook, but rather a task-oriented guide offering concrete, actionable steps for migrating from a hodgepodge of direct-access arrays to an optimized, centrally managed storage network.

Moving from DAS to SAN is actually the first step in a four-part strategy for achieving Smith's goal of delivering the "same or better storage service levels, storage capacity, and data protection at a lower cost." After consolidating, he advises developing discrete storage service levels that specify distinct performance and availability metrics and assigning each enterprise application to the appropriate service category.

The next stop on Smith's roadmap is translating service levels into distinct storage tiers, defined by technology, performance, and cost. This means dynamic datasets needing maximum throughput (transactional databases, for example) aren't comingled with static, high-capacity applications such as email stores or user home directories. "Migrate data as it ages from performance tier to capacity tier to archive," Smith writes.

The final strategic step entails exploiting the many cloud or managed storage services to offload internal infrastructure. These can be selectively used for low-risk archival data or unexpected, transient needs for additional capacity.

Improvement Projects

Along with providing a strategic roadmap, "Data Center Storage" outlines numerous improvement projects for each stage of an enterprise storage transformation, including ways to increase power and cooling efficiency and steps for boosting uptime and reliability, which serve as useful templates readers can apply to their specific storage needs. For IT leaders looking to tame their company's storage beast using the latest architectures, technologies, and services, Smith's book offers a useful primer and helpful guide. P

Key Concepts

- Enterprises face a flood of new data storage demands that can't be met through legacy systems, even with today's latest disk technology. Data centers must redesign applications and servers around shared storage pools and use consolidated storage to bootstrap even greater operational efficiencies.
- Shared storage enables formalization of storage service levels and tiers that allow matching performance, availability, and price to application requirements. Efficient storage architectures mean using the right technology for each need.
- Tiered storage, segregating between high-performance and capacity-optimized or archival systems, is just a beginning; these should be augmented with cloud storage for low-risk, noncritical storage needs.

New & Upcoming IT Book Titles

"Computer Incident Response and Product Security," by Damir Rajnovic. IT security is a high priority for most enterprises, but many organizations are ill prepared to deal with security incidents when they occur. This book provides a primer in setting up and operating an incident response team and responding to security events.

"Disciplined Dreaming," by Josh Linkner. Lazy daydreaming is fun and occasionally leads to real inspiration, but mostly it's a time waster. This book examines how to turn those natural tendencies of wanderlust into meaningful ideas. The author outlines a system for generating productive creativity. These are far from the consultant-driven "innovation workshops" familiar to most, but rather a systematic approach to creativity designed for problems business executives face daily.

"Enterprise Social Technology," by Scott Klososky. Social technologies have transformed how people meet, organize, and interact online and are now affecting the business world. Although corporate marketing departments have been exploiting social software, many IT and business executives don't know whether they're a boon or bane. This book aims to close this knowledge gap by providing a 12-step program for implementing social technology in any type of organization, along with outlining metrics that can quantify their business value.

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Suite 100
Irving, Texas
tinyurl.com/NHDallas325

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March 25, 9 a.m. to noon
New Horizons Louisville
7410 New L Grange Road, Suite 120
Louisville, Ky.
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Data Center World
March 27-31
Mirage Hotel & Convention Center
Las Vegas, Nev.
www.datacenterworld.com

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Cisco (ICND1): Interconnecting Cisco Network Devices, Part 1
March 28-April 1, 6 p.m.
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Configuring & Managing Microsoft SharePoint 2010
March 28-April 1, 9 a.m.
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Configuring Windows Server 2008 Active Directory Domain Services
March 28-April 1, 6 p.m.
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AITP Akron- Tools For Deploying Windows 7
March 29
Akron, Ohio
www.akron-aitp.org

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ISSA Metro Atlanta
March 31, 6:30 p.m.
SecureWorks
One Concourse Parkway NE, 5th Floor
Atlanta, Ga.
www.gaissa.org

APRIL

Central Plains ISSA
April 1, 1 p.m.
Wichita Marriott Restaurant
9100 E. Corporate Hills Drive
Wichita, Kan.
issa-cp.org

Microsoft Office 2010: A Test Drive— Access & Excel
April 5, 9:30 to 11:30 a.m.
or 12:30 to 2:30 p.m.
New Horizons Dayton
1890 Commerce Center
Fairborn, Ohio
tinyurl.com/NHDayton45

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Cincinnati Programmers Guild
April 7, 6:30 to 8:30 p.m.
Max Technical Training
4900 Parkway Drive
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SharePoint User Group
April 7, 6 to 8 p.m.
Max Technical Training
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Cisco (SWITCH): Implementing Cisco Switched Networks
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Fundamentals of Microsoft Server 2008 Active Directory
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VMware vSphere: Install, Configure, Manage v4.1
April 11, 9 a.m.
Platform Labs
1275 Kinnear Road
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AITP Southwest Missouri
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PASS Minnesota
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passmn.org

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AITP Omaha
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ISSA Northern Virginia
April 21, 5:30 p.m.
issa-nova.org

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SIM Minnesota
April 21, 2:30 p.m.
Northland Inn
7025 Northland Drive N.
Minneapolis, Minn.
www.simnet.org

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April 25-29, 6 p.m.
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AITP Akron- Student Project Presentations
April 26
Akron, Ohio
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AITP St. Louis
April 28, 5:30 p.m.
Crowne Plaza Clayton
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stlouisaitp.org

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ISSA Metro Atlanta
April 29, 6:30 p.m.
SecureWorks
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MAY

Cincinnati Programmers Guild
May 5, 6:30 to 8:30 p.m.
Max Technical Training
4900 Parkway Drive, Suite 160
Mason, Ohio
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.aspx?pagename=ITAssociations

Do you have an event you'd like to see listed?
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Five Energy Reduction Steps:
Gartner Report Singles Out Data Center Cooling & Density For Improvement

BY ROD SCHER

We all know that data centers are huge consumers of power and that HVAC is one of the single largest contributors to that overall energy drain. (Intel estimates that 60% or more of data center power usage can be attributed to facilities power and data center cooling.)

There was a time when we might have spread out equipment in order to reduce density, thus also reducing HVAC-related energy demands, but that's tough to do these days. Space is at a premium and more and more servers are needed, resulting in densely populated racks and a corresponding increase in localized demands for power and cooling.

A recent Gartner report points out that there are ample opportunities to increase data center efficiency: "Most IT assets are underutilized," notes the report. "For example, x86 servers are running at 12% utilization, racks are populated to 50 to 60% capacity, [and] floor space is 'spread out' to disperse the heat load. It becomes clear that an efficiently designed and implemented data center can yield significant improvements."

In the report, Gartner Chief of Infrastructure Research Dave Cappuccio notes, "The trend toward higher-density cabinets and racks will continue unabated through 2012, increasing both the density of compute resources on the data center floor and the density of both power and cooling required to support them."

What Can You Do?

The answer, Cappuccio says, is to "think small, think dense—the objective is the highest compute performance per kilowatt." To that end, the report recommends five things we can do today to improve overall efficiencies: First, Gartner recommends implementing row- and rack-based cooling for higher-density equipment; this can reduce energy consumption by up to 15%. Second, Gartner says enterprises should right-size new data centers by building and provisioning only what is needed and then expanding only when needed. That can reduce long-term operating expenses substantially.

Third, you should consider using air economizers in certain geographies; it's a simple step with sizable rewards. Fourth, pay particular attention to floor layouts, not only with respect to hot aisle/cold aisle factors, but with regard to overall air movement (distance) to reduce workloads on your air handling equipment. Finally, you should virtualize as much as possible, especially on x86 equipment. The average x86 server has very low utilization levels but requires a high degree of its maximum power to run. Push these systems to higher utilization levels to reduce overall energy consumption, reduce floor space, and see more efficient use of your IT assets.

Temperature Adjustments

The idea of utilizing economizers when and where appropriate struck a chord with Don Beaty, co-founder of ASHRAE Technical Committee 9.9 (www.ashrae.org). "In a region where the climate is optimal, the economizer has the potential to create great ROI," Beaty says. "For example, over 50% of the cooling energy can be saved. ASHRAE will soon release wider operating temperature range classes, and these wider temperature ranges will create more opportunity for economizers and for their use for more hours per year."

Beaty says that although the upper temperature limit for the air inlet to servers is currently 81 degrees Fahrenheit, ASHRAE believes that "raising this limit raises the temperature outdoors that can provide cooling without the need for compressors, meaning refrigeration equipment."

Gartner says that energy consumption will be the most dominant trend in data centers during the next five years and that, with potential regulatory involvement in data center efficiencies, IT and facilities managers will be required to show continuous improvements in how resources are utilized. P

Processor Solutions Directory

Here are brief snapshots of several companies offering products designed for the data center and IT industry.

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You can find more detailed information on these companies and the products they offer inside this issue.

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